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City of Salford.

ANNUAL REPORT

OF THE

Medical Officer of Health

FOR THE YEAR

1932.

BY

H. OSBORNE,

MEDICAL OFFICER OF HEALTH.

66191

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City of Salford.

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MEDICAL OFFICER OF HEALTH.

Members of the Health Committee,

1932-1933.

Alderman Desquesnes, *Chairman.*

Alderman Jackson, J.P., Deputy-Mayor, *Deputy-Chairman.*

Councillor J. F. Emery, J.P. (*Mayor*)
,, Binns.
,, Buck.
,, Connolly, J.P.
,, Cuttiford.
,, Dulberg.
,, Fearnehough.
,, Hampson.
Councillor Haynes.
,, Higginbottom.
,, Kitchin.
,, Nuttall.
,, Smith, G. W.
,, Webb, J. A., J.P.
,, Webb, L.
,, Worsley,

Also co-opted for Housing Purposes :—

Mrs. Roberts	Representing the Pendleton Co-operative Industrial Society Limited.
Mrs. Cuddeford, J.P. ...	A member of the Maternity and Child Welfare Sub-Committee.
Miss D. L. Pilkington ..	Representing the Manchester and Salford Women Citizens' Association.

The following members were co-opted upon the undermentioned Sub-Committees, viz. :—

Tuberculosis Sub-Committee—Mr. W. Brice and Mr. O. A. Buck, representing the Salford Insurance Committee.

Maternity and Child Welfare Sub-Committee—Mrs. J. Goodier Haworth, J.P., representing the Ladies' Public Health Society; Mrs. Pilkington, representing the Manchester and Salford Women Citizens' Association; and Mrs. Cuddeford, J.P., representing the Women's Guild of the Pendleton Co-operative Industrial Society Limited.

STAFF.

Public Health Department.

Medical Officer of Health Administrative Tuberculosis Officer	H. Osborne, M.D., M.R.C.S., D.P.H., etc.
Honorary Consulting Medical Officer.	C. H. Tattersall, M.R.C.S., L.R.C.P., D.P.H.
Clinical Tuberculosis Officers	E. N. Ramsbottom, M.A., B.Sc., M.D. (Lond.), D.P.H., etc. J. G. McKinlay, M.B., Ch.B., D.P.H.
Maternity and Child Welfare Medical Officers	Miss M. Sproul, M.B., Ch.B., D.P.H. Miss K. D. Arnsby, M.B., B.S. Miss J. C. King, M.B., Ch.B., D.P.H.
Consulting Obstetrician	W. R. Addis, M.C., M.B., Ch.B.
City Pathologist	G. J. Crawford, B.Sc., M.D., M.R.C.P. (Lond.), D.P.H.
Assistant Pathologist	Miss L. Stent, M.D., M.R.C.S., L.R.C.P.
Venereal Diseases Medical Officer	E. Tytler Burke, D.S.O., M.B., Ch.B.
Deputy Venereal Diseases Medical Officers	F. W. F. Purcell, M.R.C.S., L.R.C.P. (to 6th August, 1932). R. Marinkovitch, M.D., Ch.B. (from 7th August, 1932).
Asst. Venereal Diseases Medical Officers	F. M. Blades, M.B., Ch.B. R. Marinkovitch, M.D., Ch.B. (to 6th August, 1932). W. E. Orchard, M.B., Ch.B., D.P.H. (from 1st August, 1932).

*HOPE HOSPITAL.

Medical Superintendent	J. D. Giles, O.B.E., M.D.
Assistant Medical Superintendent	J. Stuart Smith, M.B., D.P.H. (to 28th September, 1932).
Deputy Medical Superintendent and Resident Surgical Officer.	G. Brown, M.B., Ch.B., F.R.C.S. (from 29th September, 1932).
Anæsthetist, Lecturer and Radiologist	J. Ghosh, F.R.C.S., D.P.H.
Visiting Physician	G. J. Langley, M.D. (Lond.), M.B., M.R.C.P.
Visiting Specialist in Children's Diseases	Catherine Chisholm, B.A., M.D.
Visiting Gynæcologist	John W. A. Hunter, M.B., Ch.B.
Consulting Orthopædic Surgeon	S. M. Milner, M.A., M.B.
Resident Medical Officer	S. Alstead, M.D., M.R.C.S., L.R.C.P. (16th April, 1932). W. Mackay, M.D., Ch B., F.R.F.P.S. (from 1st June, 1932).
Resident Obstetric Officer	R. W. Luxton, B.Sc., M.D., M.R.C.P., Ch.B.

LADYWELL SANATORIUM.

Medical Superintendent	W. Edge, M.R.C.S., L.R.C.P., D.P.H.
Assistant Resident Medical Officer	T. Ross, M.B., Ch.B.
Junior Resident Medical Officer	M. Allan, M.B., Ch.B.

NAB TOP SANATORIUM.

Medical Superintendent	H. M. Fleming, B.A., M.D., D.P.H.

Veterinary Inspector	A. Alexander, M.R.C.V.S., D.V.S.M.
Public Analyst	H. E. Monk, B.Sc., F.I.C.
Chief Administrative Assistant	E. Wood.
Chief Sanitary Inspector	J. P. Cargill, M.R.S.I.

* Poor Law Hospital administered by Health Committee subject to general direction and control of Public Assistance Committee.

TO THE HEALTH COMMITTEE OF THE CITY OF SALFORD.

Gentlemen.

I have the honour to present my report on the health of the City and the work of the Public Health Department for the year 1932.

Death Rate.

The death rate for the year was 13·2 per thousand of the population, this being a decrease of 1·0 per thousand as compared with 1931. This rate is the second lowest on record for the city. There was a reduction in the actual number of deaths from 3,198 to 2,919.

Birth Rate.

The birth rate for 1932 remained at the same level as that of 1931, viz., 15·4 per thousand of the population. The number of births occurring during the year was actually 78 less than occurred in 1931, the stability of the birth rate itself being due to the fact that the Registrar General's estimate of the population of Salford at mid-year 1932 was less by 5,600 than that for 1931. For the sake of interest I reproduce below the table which was included in my last Annual Report :—

Year.	No. of Births.	Reduction as compared with preceding year.
1922	5,416	577
1923	5,047	369
1924	4,745	302
1925	4,597	148
1926	4,511	86
1927	4,301	210
1928	4,073	227
1929	3,903	170
1930	3,787	116
1931	3,479	308
1932	3,401	78

Tuberculosis.

There was a marked and welcome fall in the death rate from tuberculosis during 1932 from 1·2 to 1·0 per thousand of the population. It is impossible to draw any definite conclusions from the evidence of any one year, but this experience is another indication of the general decline in the mortality rate from tuberculosis. It does not follow, unfortunately, that the incidence of the disease is decreasing to any marked extent, but it does suggest that the improved methods of diagnosis and treatment now at our disposal are lengthening the period during which resistance may be maintained.

The hope expressed in my last Annual Report that it might be possible to provide additional facilities for artificial pneumothorax treatment was realised during 1932, and this beneficial form of treatment was continued with success. This subject is deal twith at greater length on pages 67 to 69 of my Report.

Maternity and Child Welfare.

The Infant Mortality Rate for the year 1932 fell to 99 as compared with 101 in 1931—a slight improvement but still a high rate compared with the general average for the country and most other large towns. The explanation probably lies in the fact that the population of Salford contains a far larger proportion than the average local government area of people in relatively poor financial circumstances who, with the best will in the world, are unable to give their children a chance of survival equal to that given to children born under more fortunate conditions.

Handicaps, such as unsatisfactory housing conditions, insufficient or unsuitable feeding of the mother before and after confinement, inability to buy the right type of food for an ailing child, and the general atmosphere of depression in a home where a constant struggle merely to exist is being maintained, can be overcome successfully only by the stronger infants; the tale of the weakly babies is told in the infantile mortality statistics.

One satisfactory feature of the year's work was the continued increase in the attendance of mothers and children at the Clinics and Centres. The total attendances for the year were 75,800, an increase of more than 5,000 over the figure for the previous year, and of 50 per cent compared with the attendances of 10 years ago.

Protection Against Diphtheria.

The year's progress in propagating the gospel of immunisation is outlined on pages 107 and 108 of my Report.

While the increase in the number of parents consenting to immunisation has been substantial, one of the main results of the year's work has been the discovery that in Salford, at any rate, persuasion and propaganda under ordinary conditions will produce very little. Until immunisation becomes a generally accepted duty of parents towards their offspring, it appears to be possible to stimulate most parents to activity only when they have reason to believe their children to be in immediate peril from infection. That this should be the case is not a matter for great surprise. Vaccination could never have been popularised had the earlier epidemics of smallpox not been so much more intense and widespread than they are to-day. In the same way one is driven to think that the acceptance of immunisation will always be more general during epidemics than at normal times. The ordinary clinics and methods of propaganda will, of course, be continued, while opportunities of making special efforts will be seized as they present themselves.

Re-housing.

On pages 41 to 45 of this volume will be found a detailed account of re-housing in Salford during 1932. So far as the Greengate area is concerned, the year 1932 merely saw the completion of activities undertaken during the previous year, but in the case of Chapel Street Areas Nos. 1, 2, 3, and 4, the whole of the administrative procedure, from the making of representations to the Health Committee in January to the confirmation of the Clearance Order in October and its coming into operation in December, was completed within the year. The total numbers of houses, families, and persons comprised in these four areas are as follows:—

Houses	98
Families	130
Persons	475

In spite of the efforts made during the last few years, only the fringe of the problem of re-housing the people of Salford has been touched up to the present. The remainder of the task will demand the most careful and earnest consideration, constituting, as it does, one of the most important public health activities which has ever been undertaken. No other work in the sphere of social service can so closely affect the lives and happiness of a large section of the population as this work of re-housing, and no other expenditure can produce more beneficial results at a comparable cost.

I commend the study of re-housing to the members of the Health Committee as the most important public health issue, not only of to-day but of the next quinquennium.

In conclusion, I wish to express my thanks for the consideration which the Health Committee has extended to me during the past year, and my appreciation of the willing co-operation of the Staff of the Department.

I have the honour to be, Gentlemen,

Your obedient servant,

H. OSBORNE,

Medical Officer of Health.

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SECTION I.

Mortality Statistics.

STATISTICAL SUMMARY, 1932.

Area.—The City of Salford has a total area of 5,202 acres.

Population.—(Registrar-General's Estimate at Mid-year, 1932) .. 220,300
,, (Census, 1931) 223,438

Density.—The Mean Density of the City is equal to 42·4 persons per acre.

Live Births { **Legitimate 1,618 Males, 1,647 Females** 3,265
Illegitimate 79 ,, 57 ,, ... 136
Total 3,401

Annual Rate of Births per 1,000 of the Population .... 15·4

Still Births { **Males 114** } **Females 87** } **Total** 201

Annual Rate of Still Births per 1,000 Total Births .... 55·8

Deaths { **Males 1,498** } **Females 1,421** } **Total** 2,919

Annual Rate of Mortality per 1,000 of the Population .... 13·2

Percentage of total deaths occurring in Public Institutions, 49 per cent.

Deaths from Puerperal Causes :—

	Deaths.	Rate per 1,000 Total Births.
Puerperal Sepsis	5	1·4
Other Puerperal Causes	17	4·7
Total..	22	6·1

Death-rate of Infants under one year of age per 1,000 live births:—
Legitimate, 98. Illegitimate, 107. Total 99

Deaths from Measles (all ages) 21
,, ,, **Whooping Cough** (all ages) 30
,, ,, **Diarrhœa** (under 2 years of age) 55

TABLE M. 1.

DEATHS IN WARDS FOR THE YEAR 1932.

CAUSES OF DEATH.	AT ALL AGES.																
	City.	Albert Park.	Charlestown.	Claremont.	Crescent.	Docks.	Kersal.	Langworthy.	Mandley Park.	Ordsall Park.	Regent.	St. Matthias'.	St. Paul's.	St. Thomas'.	Seedley.	Trinity.	Weaste.
Enteric Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Small-pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Measles	21	1	2	1	6	..	1	..	1	1	..	2	1	4	..	1	..
Scarlet Fever	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Whooping Cough	30	1	1	1	3	..	3	1	1	3	1	1	2	4	1	6	1
Diphtheria and Croup	21	3	1	..	2	3	..	..	..	1	1	..	4	4	1	1	..
Influenza	36	3	1	6	..	4	2	1	..	5	2	..	3	2	2	3	2
Erysipelas	9	..	..	1	..	..	..	1	..	..	..	2	1	2	..	1	1
Encephalitis Lethargica	9	..	1	..	2	1	1	..	..	1	1	..	..	1	1	..	..
Tuberculosis of Respiratory System	226	13	15	7	27	14	10	8	9	20	18	14	21	11	10	21	8
Tuberculous Meningitis	14	..	..	1	3	1	..	1	1	1	2	..	1	1	..	2	..
Other Tuberculous Diseases	21	2	..	1	2	1	1	..	1	2	3	2	1	..	1	3	1
Syphilis	13	1	1	1	1	2	..	..	1	..	1	1	..	1	..	3	..
General Paralysis of the Insane, etc	5	1	..	..	1	..	1	..	..	..	..	..	..	..	..	1	1
Cancer (Malignant Disease)	377	41	23	12	25	37	16	12	23	28	23	23	26	21	14	32	21
Diabetes	17	6	..	..	..	1	..	..	2	..	1	4	1	..	..	2	..
Rheumatic Fever	10	1	..	1	..	1	2	..	1	..	..	..	..	1	2	1	..
Meningitis	13	..	..	..	..	2	..	..	1	1	1	2	1	2	..	2	1
Cerebro-Spinal Fever	4	..	1	..	1	..	..	..	..	..	..	..	1	..	..	..	1
Cerebral Hæmorrhage, etc	120	14	4	17	6	5	13	6	7	10	7	6	5	2	1	8	9
Heart Disease	389	36	23	12	27	23	29	11	26	28	23	35	18	32	15	28	23
Aneurysm	4	..	..	..	1	..	..	..	..	..	2	..	..	..	..	..	1
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Other Circulatory Diseases	114	9	8	8	6	5	10	2	12	3	12	6	5	6	7	6	9
Bronchitis	252	16	22	3	28	10	4	6	9	17	42	22	23	14	12	14	10
Pneumonia (all forms)	252	11	23	5	39	15	9	13	6	20	19	19	18	9	8	30	8
Other Respiratory Diseases	29	3	2	1	4	1	2	2	1	..	3	3	1	1	..	3	2
Diarrhœa and Enteritis	63	6	2	1	9	2	3	3	1	3	12	8	1	5	1	5	1
Peptic Ulcer	22	2	..	..	1	..	2	2	..	3	2	1	2	..	2	4	1
Appendicitis	13	2	..	..	..	..	..	..	2	2	2	2	1	1	1	..	..
Cirrhosis of Livor	2	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..
Other Diseases of Liver, etc	21	..	1	2	..	3	1	..	1	1	2	..	4	..	3	2	1
Other Digestive Diseases	35	2	1	3	5	1	..	2	3	2	1	1	1	7	4	1	1
Nephritis, Acute and Chronic	68	4	6	2	6	6	4	4	5	4	7	8	2	..	2	7	1
Puerperal Sepsis	5	..	2	..	1	..	..	..	..	..	..	..	..	1	..	1	..
Other puerperal causes	17	..	..	1	1	1	2	2	1	1	1	1	2	2	..	..	2
Congenital Debility and Malformation	44	2	5	1	3	1	1	1	1	6	3	5	2	2	2	7	2
Premature Birth	81	7	6	1	5	4	4	1	6	6	8	6	9	5	3	6	4
Senility	237	22	15	11	25	16	14	10	10	14	17	14	18	19	7	16	9
Suicide	22	2	1	..	2	1	..	1	2	2	4	1	1	1	2	2	..
Other Violence	92	5	6	4	9	3	6	2	9	3	7	6	5	6	6	7	8
Other Defined Diseases	204	26	15	9	16	16	9	6	18	10	17	17	9	11	5	5	15
Causes Ill-defined or Unknown	6	..	1	1	..	..	1	..	1	..	..	..	..	1	..	..	1
Totals	**2919**	**242**	**189**	**115**	**268**	**180**	**151**	**98**	**162**	**198**	**246**	**212**	**190**	**179**	**113**	**231**	**145**

TABLE M. 2.

Causes of, and Ages at, Death during the Year 1932.

Causes of Death.	Net Deaths at the Subjoined Ages of "Residents" whether occurring within or without the District.								
	All Ages.	Under 1 year.	1 and under 2 years.	2 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 45 years.	45 and under 65 years.	65 and upwards.
All Causes—Certified	2905	335	71	67	74	136	311	849	1062
Uncertified	14	1	..	..	..	..	2	5	6
Enteric Fever	..	..	..	..	..	..	..	..	..
Small Pox	..	..	..	..	..	..	..	..	..
Measles	21	4	6	10	1	..	..	..	..
Scarlet Fever	1	..	..	..	..	..	1	..	..
Whooping Cough	30	14	5	8	3	..	..	..	..
Diphtheria and Croup	21	..	1	7	12	..	..	1	..
Influenza	36	3	..	2	..	3	2	16	10
Erysipelas	9	1	..	..	..	..	2	2	4
Encephalitis Lethargica	9	..	..	..	..	1	5	3	..
Tuberculosis of Respiratory System	226	..	2	1	3	64	78	67	11
Tuberculous Meningitis	14	1	2	5	1	2	2	1	..
Other Tuberculous Diseases	21	2	1	1	4	4	4	3	2
Syphilis	13	5	2	..	..	..	..	5	1
General Paralysis of the Insane, Tabes Dorsalis	5	..	..	..	..	..	3	1	1
Cancer, Malignant disease	377	..	..	1	1	2	16	193	164
Diabetes	17	..	..	..	..	1	3	3	10
Rheumatic Fever	10	..	..	..	2	1	2	4	1
Meningitis	13	6	2	2	..	3	..	..	..
Cerebro-Spinal Fever	4	..	1	2	1	..	..	..	..
Cerebral Hæmorrhage, etc.	120	..	..	..	..	..	6	47	67
Heart Disease	389	..	..	..	4	7	39	137	202
Aneurysm	4	..	..	..	..	..	1	2	1
Other Circulatory Diseases	114	..	..	..	..	..	3	24	87
Bronchitis	252	21	3	1	1	1	14	87	124
Pneumonia (all forms)	252	72	32	15	10	8	33	50	32
Other Respiratory Diseases	29	1	..	2	1	1	3	17	4
Diarrhœa and Enteritis	63	53	2	2	2	..	1	1	2
Peptic Ulcer	22	..	..	1	..	3	4	11	3
Appendicitis	13	..	..	..	4	2	1	5	1
Cirrhosis of Liver	2	..	..	..	..	..	..	1	1
Other diseases of Liver, etc,	21	2	..	..	1	..	2	8	8
Other Digestible Diseases	35	5	..	1	2	1	2	15	9
Nephritis Acute and Chronic	68	..	2	..	2	3	11	26	24
Puerperal Sepsis	5	..	..	..	..	3	2	..	..
Other Puerperal causes	17	..	..	..	..	1	16	..	..
Congenital Debility and Malformation	44	43	1	..	..	..	..	..	..
Premature Birth	81	81	..	..	..	..	..	..	..
Senility	237	..	..	..	..	..	..	8	229
Suicide	22	..	..	..	..	..	7	13	2
Other Violence	92	7	2	5	9	9	12	27	21
Other Defined Diseases	204	14	7	1	10	15	36	75	46
Diseases ill-defined or unknown	6	1	..	..	..	1	2	1	1
Totals	2919	336	71	67	74	136	313	854	1068

TABLE M. 4.

Births in the City of Salford and in its Wards, distinguishing Deaths of Legitimate and Illegitimate Infants under One Year old. For the Year 1932.

Ward.	Births.		Percentage of Illegit. Births to Total Births.	Deaths under One Year.		Proportion of Deaths under One Year per 1,000 Births.		
	Total.	Illegit.		Total.	Illegit.	Total.	Legit.	Illegit.
Albert Park	261	13	5·0	25	..	96	101	..
Charlestown	278	11	4·0	28	1	101	101	91
Claremont	75	1	1·3	7	..	93	95	..
Crescent	320	17	5·3	36	1	112	115	59
Docks	196	10	5·1	15	2	77	70	200
Kersal	159	5	3·1	13	2	82	71	400
Langworthy	150	3	2·0	13	..	87	88	..
Mandley Park ..	197	8	4·1	14	..	71	74	..
Ordsall Park	259	13	5·0	20	1	77	77	77
Regent	284	6	2·1	38	2	134	129	333
St. Matthias' ...	252	11	4·4	25	1	99	100	91
St. Paul's	239	5	2·1	22	..	92	94	..
St. Thomas'	213	10	4·7	22	1	103	103	100
Seedley	99	..	..	7	..	71	71	..
Trinity	285	22	7·7	38	2	133	137	91
Weaste	134	5	3·7	13	2	96	85	400
Totals	**3,401**	**140**	**4·1**	**336**	**15**	**99**	**98**	**107**
Corresponding Data for the City for the Ten Years 1922–1931.								
City	**43,781**	**1,744**	**4·0**	**4,529**	**296**	**103**	**107**	**169**

TABLE M. 5.

Showing the Births in the City of Salford, Deaths of Legitimate and Illegitimate Infants under One Year old and the proportion of Deaths under One Year of age per 1,000 Births during the Years 1915 to 1932.

Year.	Births.			Percentage of Illegitimate Births to Total Births.	Deaths under One Year.			Proportion of Deaths under One Year per 1,000 Births.		
	Total.	Legit.	Illegit.		Total.	Legit.	Illegit.	Total.	Legit.	Illegit.
1915....	5455	5257	198	3·6	733	692	41	134	132	207
1916....	5091	4894	197	3·9	587	544	43	115	112	218
1917....	4452	4234	218	4·9	551	498	53	124	118	243
1918....	4282	4043	239	5·5	478	436	42	111	107	175
1919....	4435	4179	256	5·8	501	466	35	113	111	137
1920....	6441	6170	271	4·2	630	584	46	97	94	169
1921....	5993	5702	291	4·8	641	585	56	107	102	192
1922....	5416	5169	247	4·5	599	564	35	110	109	141
1923....	5047	4841	206	4·1	493	458	35	98	95	170
1924....	4745	4569	176	3·7	579	533	46	122	117	261
1925....	4597	4398	199	4·3	482	452	30	105	103	151
1926....	4511	4349	162	3·6	464	434	30	103	100	185
1927....	4301	4130	171	4·0	348	328	20	81	79	117
1928....	4073	3915	158	3·9	431	408	23	106	104	146
1929....	3903	3761	142	3·6	489	460	29	125	122	204
1930....	3787	3640	147	3·9	323	290	33	86	80	224
1931....	3479	3357	122	3·5	351	326	25	101	97	205
1932....	3401	3265	136	4·1	336	321	15	99	98	107

TABLE M. 6.

Showing the Birth-Rates, also Rates of Mortality from All Causes, from the Seven Principal Zymotic Diseases, and from Phthisis, Cancer, Nervous Diseases, Heart Diseases, Bronchitis, Pneumonia and the Infant Mortality Rate, during the Years 1878 to 1932.

Years.	Population.	Rates per 1,000 Population from									Deaths under One Year to 1,000 Births.	Marriage Rate.
		Births.	Deaths, All Causes.	Seven Principal Zymotic Diseases.	Phthisis.	Cancer.	Nervous Diseases.	Heart Diseases.	Bronchitis.	Pneumonia.		
1878..	160,277	44·7	27·1	5·4	2·7	0·5	3·5	1·1	3·6	1·8	185	17·9
1879*	165,899	43·0	26·7	4·2	2·9	0·4	3·7	1·2	4·3	1·8	170	15·2
1880..	171,727	41·4	27·9	7·4	2·7	0·4	3·2	0·9	3·4	1·9	197	16·6
1881..	177,760	38·8	22·5	3·0	2·5	0·5	3·1	1·1	3·6	1·6	163	16·4
1882..	179,855	39·7	23·7	4·0	2·4	0·4	3·6	1·1	2·8	1·7	177	16·9
Average 5 years.		**41·5**	**25·6**	**4·8**	**2·6**	**0·4**	**3·4**	**1·1**	**3·5**	**1·8**	**178**	**16·6**
1883..	181,951	37·3	23·6	3·4	2·7	0·4	3·1	1·2	3·0	1·7	171	16·1
1884*	184,047	38·8	24·4	4·4	2·6	0·5	2·9	1·1	2·8	1·7	184	16·1
1885..	186,142	37·6	23·0	3·6	2·6	0·5	2·9	1·2	3·0	1·9	174	16·1
1886..	188,238	38·5	24·8	4·1	2·6	0·5	2·8	1·3	3·3	1·8	197	15·3
1887..	190,334	36·6	25·5	4·9	2·3	0·5	3·2	1·3	2·9	2·2	195	15·4
Average 5 years.		**37·8**	**24·3**	**4·1**	**2·6**	**0·5**	**3·0**	**1·2**	**3·0**	**1·9**	**184**	**15·8**
1888..	192,429	37·1	24·8	3·9	2·3	0·5	3·0	1·1	3·0	2·1	184	15·2
1889..	194,525	35·9	25·1	5·3	1·9	0·6	2·5	1·3	2·6	1·9	181	16·7
1890*	196,621	36·1	27·7	4·4	2·2	0·5	2·0	1·3	3·4	3·8	198	17·5
1891..	198,775	36·3	26·0	3·4	2·2	0·5	2·2	1·1	3·7	3·0	194	18·1
1892..	200,833	35·8	24·6	4·6	1·9	0·6	2·0	1·2	2·6	2·9	186	16·7
Average 5 years.		**36·2**	**25·6**	**4·3**	**2·1**	**0·5**	**2·3**	**1·2**	**3·1**	**2·7**	**189**	**16·8**
1893..	203,015	34·7	24·1	4·2	1·9	0·6	2·0	1·4	2·6	2·3	211	16·2
1894..	205,220	34·3	21·1	3·3	1·8	0·6	2·0	1·1	1·9	2·3	174	17·1
1895..	207,449	35·9	25·6	5·0	1·9	0·6	2·3	1·3	2·6	2·7	229	17·4
1896*	209.703	35·6	23·1	4·2	1·5	0·6	2·0	1·4	2·2	2·7	200	18·1
1897..	211,981	35·2	23·9	5·6	1·8	0·6	2·1	1·3	2·4	2·1	219	18·6
Average 5 years.		**35·1**	**23·6**	**4·5**	**1·8**	**0·6**	**2·1**	**1·3**	**2·3**	**2·4**	**207**	**17·5**
1898..	214,284	34·9	22·8	4·2	1·8	0·8	2·2	1·2	2·2	2·2	213	18·6
1899..	216,612	34·1	23·9	4·4	1·8	0·6	2·3	1·4	2·5	2·7	211	18·7
1900..	218,965	33·3	25·3	4·1	1·8	0·6	2·4	1·7	3·2	2·8	208	17·3
1901..	221,212	29·2	21·7	4·2	1·8	0·7	1·9	1·5	2·3	1·9	205	17·9
1902*	222,233	34·0	19·3	2·7	1·7	0·7	2·0	1·5	2·2	2·1	157	18·4
Average 5 years.		**33·1**	**22·6**	**3·9**	**1·8**	**0·7**	**2·2**	**1·5**	**2·5**	**2·3**	**199**	**18·2**
1903..	223,260	32·6	19·4	2·9	1·8	0·7	1·9	1·4	2·1	1·9	168	18·1
1904..	224,299	32·4	21·4	4·4	2·0	0·6	1·8	1·7	2·2	1·9	193	21·5
1905..	225,327	31·8	17·7	2·6	1·5	0·6	1·7	1·6	1·8	1·8	148	17·8
1906..	226,367	31·2	19·1	3·3	1·7	0·8	1·7	1·5	2·0	1·8	162	18·6
1907..	227,413	30·6	18·5	2·2	1·7	0·7	1·7	1·6	2·1	2·3	140	17·9
Average 5 years.		**31·7**	**19·2**	**3·1**	**1·7**	**0·7**	**1·8**	**1·6**	**2·0**	**1·9**	**162**	**18·8**

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* In the years 1879, 1884, 1890, 1896, 1902, 1908, 1913, 1921, and 1927 the facts are those registered in 53 instead of 52 weeks; corrections have therefore been made in calculating the rates. † Civil population.

TABLE M. 6—*Continued.*

Years.	Population.	Rates per 1,000 Population from									Deaths under One Year to 1,000 Births.	Marriage Rate.
		Births.	Deaths, All Causes.	Seven Principal Zymotic Diseases.	Phthisis.	Cancer.	Nervous Diseases.	Heart Diseases.	Bronchitis.	Pneumonia.		
1908*	228,463	31·2	18·7	3·2	1·6	0·7	1·6	1·4	1·9	1·7	153	15·5
1909..	229,519	29·5	19·0	2·5	1·5	0·8	1·7	1·4	2·3	2·3	141	15·6
1910..	230,579	28·6	16·2	1·8	1·4	0·9	1·6	1·4	1·8	1·7	131	16·0
1911..	231,641	27·4	17·4	2·5	1·6	0·9	1·3	1·3	1·8	1·8	154	..
1912..	232,726	26·8	17·2	2·2	1·5	1·0	1·4	1·5	2·1	2·0	130	..
Average 5 years.		**28·7**	**17·7**	**2·4**	**1·5**	**0·9**	**1·5**	**1·4**	**2·0**	**1·9**	**142**	..
1913*	233,849	27·0	16·3	1·9	1·4	1·0	1·4	1·8	1·8	1·7	139	..
1914..	234,975	26·9	17·1	1·9	1·6	1·1	1·4	1·8	1·8	1·8	126	..
1915..	219,979†	24·8	19·1	2·8	1·7	1·1	1·4	1·6	2·3	1·9	134	..
1916..	214,229†	21·8	15·8	1·2	1·6	1·0	1·3	1·3	1·9	1·5	115	..
1917..	211,373†	18·9	16·0	1·6	1·5	1·2	1·4	1·3	2·0	1·4	124	..
Average 5 years.		**24·3**	**16·8**	**1·9**	**1·6**	**1·0**	**1·4**	**1·6**	**2·0**	**1·7**	**128**	..
1918..	209,274†	18·3	18·0	1·0	1·6	1·1	1·2	1·1	2·3	1·9	111	..
1919..	226,225†	18·8	15·8	0·8	1·2	1·1	1·1	1·1	2·4	1·5	113	..
1920..	235,239	27·3	13·7	0·9	1·2	1·0	1·0	1·0	1·8	1·1	98	..
1921*	239,100	25·2	13·9	1·1	1·3	1·0	1·0	1·2	1·7	1·5	106	..
1922..	240,700	22·1	14·6	1·3	1·3	1·1	0·9	1·1	1·9	1·7	110	..
Average 5 years.		**22·3**	**15·2**	**1·0**	**1·3**	**1·0**	**1·0**	**1·1**	**2·0**	**1·5**	**108**	..
1923..	241,600	20·9	13·5	0·8	1·3	1·2	0·9	1·1	1·6	1·5	98	..
1924..	243,700	19·5	14·5	1·3	1·2	1·3	0·7	1·0	1·8	1·6	122	..
1925..	244,700	18·8	13·9	1·0	1·3	1·2	0·8	1·0	1·8	1·3	105	..
1926..	247,400	18·2	12·4	0·7	1·3	1·3	0·9	1·0	1·6	1·1	103	..
1927*	247,600	17·3	13·9	0·7	1·4	1·3	1·1	1·5	1·5	1·3	81	..
Average 5 years		**18·9**	**13·6**	**0·9**	**1·3**	**1·3**	**0·9**	**1·1**	**1·7**	**1·4**	**102**	..
1928..	241,500	16·9	13·3	0·8	1·2	1·3	0·8	1·3	1·4	1·2	106	..
1929..	235,600	16·6	15·4	1·5	1·2	1·3	0·9	1·1	2·2	1·6	125	..
1930..	230,100	16·5	13·3	0·9	1·2	1·4	0·8	1·3	1·6	1·1	86	..
1931..	225,900	15·4	14·2	0·6	1·2	1·4	0·8	1·4	1·8	1·4	101	..
1932..	220,300	15·4	13·2	0·6	1·0	1·7	0·9	1·8	1·1	1·1	99	..
Average 5 years		**16·2**	**13·9**	**0·9**	**1·2**	**1·4**	**0·8**	**1·4**	**1·6**	**1·3**	**103**	..

* In the years 1879, 1884, 1890, 1896, 1902, 1908, 1913, 1921, and 1927 the facts are those registered in 53 instead of 52 weeks; corrections have therefore been made in calculating the rates. † Civil population.

SECTION II.

General Work of the Health Department.

(A) SANITARY CIRCUMSTANCES AND SANITARY ADMINISTRATION OF THE DISTRICT.

Natural and Social Conditions of the District.

Salford is situated in the south-east of Lancashire and is partially divided from Manchester by the River Irwell. The older portion of the City lies along the right bank of the river, and the ground rises gradually from an elevation of 85 feet above sea level to about 250 feet, the mean elevation being 140 feet.

The area of the City of Salford is 5,202 acres. The subsoil consists principally of clay interspersed with sand and gravel, with occasional patches of red sandstone.

The population is largely industrial; a considerable portion of the City is occupied by cotton factories and engineering works, with collieries on the outskirts.

The principal Docks and a portion of the Manchester Ship Canal are situated in Salford.

There is no special influence of any particular occupation on the public health of the area.

Owing to the industrial character of the City, and the close proximity of a number of other industrial towns, the atmosphere of Salford is heavily smoke polluted. This pollution contains an excessive proportion of tarry substances given off from the burning of raw coal in domestic grates. Generally speaking, the rainfall is excessive and the atmosphere humid. Owing to the pollution of the atmosphere and the excess of cloud, there is a deficiency of sunshine.

Salford Local Acts and Orders.

The Salford Borough Act, 1857.
The Salford Improvement Act, 1862.
The Salford Improvement Act, 1867.
The Salford Improvement Act, 1870.
The Salford Improvement Act, 1871.
The Salford Tramways and Improvement Act, 1875.

Provisional Order relating to the Borough of Salford confirmed by the Local Government Board's Provisional Order Confirmation (No. 8) Act, 1882.

An Order, dated 20th December, 1882, and made by the Local Government Board under the provisions of the Divided Parishes and Poor Law Amendment Act, 1876, as amended and extended by the Poor Law Act, 1879, amalgamating a detached part of the Township of Pendlebury with the Township of Pendleton.

The Salford Corporation Tramways Order, 1885, confirmed by the Tramways Orders Confirmation (No. 2) Act, 1885.

The Salford Corporation Act, 1886.
The Salford Corporation Act, 1891.

Provisional Order relating to the Borough of Salford confirmed by the Local Government Board's Provisional Orders Confirmation (No. 14) Act, 1891.

Provisional Order relating to the Borough of Salford confirmed by the Local Government Board's Provisional Orders Confirmation (Housing of Working Classes) Act, 1891.

Provisional Order relating to the Borough of Salford confirmed by the Local Government Board's Provisional Order Confirmation (No. 12) Act, 1892.

The Salford Improvement Act, 1893.
The Salford Corporation Act, 1897.
The Salford Order, 1898.

An Order, dated 2nd March, 1899, and made by the Local Government Board under the provisions of the Housing of the Working Classes Act, 1890, modifying an improvement scheme relating to the Borough of Salford.

The Salford Corporation Act, 1899.
The Salford Corporation Act, 1900.
The Salford Corporation Act, 1901.
The Salford Corporation Act, 1902.
The Salford Corporation Act, 1903.

Order in Council, dated 27th March, 1905, directing that none but persons duly licensed shall let Lodgings to Seamen in the Borough of Salford.

The Salford Order, 1906.
The Salford Order, 1908.
The Salford Order, 1912.
The Salford (Union of Townships) Order, 1918.
The Salford Corporation Act, 1920.

Confirming Order of Minister of Health, dated 7th April, 1921, under Section 112 of the Public Health Act, 1875, as amended by Section 51 of the Public Health Acts Amendment Act, 1907, declaring that certain trades be Offensive Trades.

Order in Council, dated 10th August, 1921, approving scheme determining the Wards of the Borough and apportioning the Councillors.

The Salford Order, 1922.
The Salford Order, 1925.
The Salford Corporation Act, 1927.

Acts of Parliament adopted by the Council.

The Baths and Wash-house Acts. Adopted October 4th, 1876.

Infectious Diseases (Notification) Act, 1889. Adopted 5th February, 1920.

The Infectious Disease (Prevention) Act, 1890 (except Sections 14 and 19) and Parts 2, 3, 4 and 5 of the Public Health Acts Amendment Act, 1890. Adopted January 7th, 1891.

The Private Street Works Act, 1892. Adopted April 4th, 1894.

Notification of Births Act, 1907. Adopted January 7th, 1914.

Section 95 of the Public Health Acts Amendment Act, 1907. Order issued by Local Government Board, dated 27th October, 1908, declaring the above section to be in force in the County Borough of Salford.

Public Health Acts Amendment Act, 1907, Section 51.

Public Health Acts Amendment Act, 1907. Order of Local Government Board, dated 28th August, 1909, that on and after 16th October, 1909, Section 47 and Part V. of the Act should be in force in the County Borough of Salford.

Public Health Acts Amendment Act, 1907. Order of Local Government Board, dated 22nd April, 1914, that on and after 3rd June, 1914, Sections 23, 27, 33 and 76 of the Act should be in force in the County Borough of Salford.

Sanitary Circumstances.

WATER.—The water supply is obtained from the Manchester Corporation's reservoirs at Longdendale Valley. It is ample in quantity and excellent in quality.

RIVERS AND STREAMS.—The question of river pollution is in the hands of the River Irwell Conservancy Committee.

Drainage and Sewerage.

The drains of the District are satisfactory. Salford sewage is conveyed to the Sewage Works at Weaste by a combined system of Sewers. The sewage is treated with Lime and Copperas, after which it is passed through settling tanks and thence through aerating filter-beds and humus tanks. The effluent from the humus tanks is discharged into the Manchester Ship Canal and the residual sludge carried out to sea by steamer.

Public Cleansing.—The removal and disposal of house refuse is under the authority of the Lighting and Cleansing Committee of the Corporation.

PUBLIC CLEANSING.

An alteration in the method of disposing of dry house refuse in Salford took place during 1932, in that to a certain extent Controlled Tipping methods took the place of incineration. I am indebted to the Director of Public Cleansing for the following particulars as to the method of collection and disposal of refuse, etc., in Salford :—

(*a*) The method of collecting dry house refuse.	Weekly collection in dustless loading vehicles from galvanised standard ashbins.
(*b*) The method of collecting refuse from earth closets and privies.	No privy ashpits. The number of excreta pails is negligible. The collection of excreta, in two-wheeled tanks, is made during the midnight hours, and taken direct to the Chief Depôt of the Cleansing Department.
(*c*) The method of disposing of dry house refuse.	Strictly under Controlled Tipping methods as laid down by the Ministry of Health, and also by incineration at the Chief Depôt of the Cleansing Department.
(*d*) The method of disposing of refuse from earth closets and privies.	(See (b)).
(*e*) The method of cleansing cesspools.	One only. The contents are transferred during the night-time into a specially-constructed two-wheeled tank, and conveyed to the Chief Depôt of the Cleansing Department, and mixed with Street Sweepings for disposal to Farmers.
(*f*) Arrangements for the disposal of cesspool contents.	

Sanitary Inspection of District.

Staff.—The staff employed in this connection consists of the Chief Inspector, a Deputy Chief Inspector, nine Assistant Inspectors, and one Lady Inspector.

The systematic inspection of the City was conducted during the year 1932 on the same lines as in previous years. The result of the inspections may be gathered from a perusal of the "Register of Work Done," which is to be found at the end of this section of the report. It shows that the number of complaints received at the office of the Department was 3,745, as compared with 3,810 received in 1931, also that 7,575 dwelling-houses were inspected during the year. The details of each section of the work will be found under the special heading.

TABLE G. 1.

COMMON LODGING HOUSES, 1932.

	Wards.				
	Crescent.	St. Paul's.	St. Thomas's.	Trinity.	Total.
Number on Register	7	1	1	5	**14**
Number added to Register in 1932	..	..	..	..	..
Number removed from Register in 1932	1	..	..	..	**1**
Number of Rooms	53	6	8	37	**104**
,, Beds	267	25	23	497	**812**
Average Number occupied each night—Males	110	16	11	367	**504**
Females	..	..	..	..	..
Notices served on Landlords	9	..	2	2	**13**
,, ,, Keepers	1	..	..	..	**1**
Number of Day Inspections	203	32	34	109	**378**
,, Night Inspections	..	..	..	8	**8**

Common Lodging Houses.

There were 14 Common Lodging Houses on the register during the year, including Salford House in Bloom Street; seven are in the Crescent Ward, five in Trinity, one in St. Paul's, and one in St. Thomas's Wards. These houses contain 111 rooms, with 839 beds. The average number of beds occupied per night was 504 for males and none for females. Three hundred and seventy-eight inspections were made during the day time and 8 at night.

The addresses of and particulars relating to these lodging houses are as follows :—

Address.	Accommodation. Sleeping Rooms.	Lodgers.	Total number of lodgers who could be accommodated during the year.	Total number of lodgers accommodated during the year.
17, Bolton Street	5	49	17,885	13,602
61, Bury Street	7	33	12,045	9,324
32/34, Chapel Street	14	88	32,120	11,424
41A, Gravel Lane	5	42	15,330	7,908
"Salford House," Bloom Street	6	285	104,025	91,366
21, East Ordsall Lane	2	16	5,840	2,855
113, Oldfield Road	7	27	9,855	779
1 and 1A, Park Place	24	125	45,625	15,093
2, Park Place	13	26	9,490	3,722
3, Park Place	4	43	15,695	4,878
13, Windsor	4	15	5,475	2,123
2, Comus Street	6	42	15,330	11,226
1/5, Travis Court	8	23	8,395	3,873
2, West High Street	6	25	9,125	5,960

The total number of lodgers who could be accommodated during the year, in all the houses, was 306,235, and the total number actually accommodated was 184,133, a difference of 122,102.

839 beds, an average of 504, were occupied each night, leaving an average of 308 beds empty. Twenty-seven beds at 113, Oldfield Road were available for 11 weeks only during the year.

The above figures show that although the lodging houses as a whole (excluding the Corporation's own institution—"Salford House" and 113, Oldfield Road) were occupied to only 47·8 per cent of their full capacity. "Salford House" itself was occupied to the extent of 87·8 per cent of its total accommodation, and this in spite of the fact that its charges are about 25 per cent higher than those obtaining in ordinary lodging houses.

These Lodging Houses have been kept in good and clean condition during the year, and the Byelaws have been observed.

Houses Sub-let in Lodgings.

There are 346 houses let in apartments in the City; these contain 2,014 rooms. Twenty-five houses were registered during the year and twelve discontinued.

The registration of these houses gives us power to inspect them at any time. They have been inspected from time to time, and they have received 1,741 inspections in the day time and 262 at night.

Throughout the year the District Inspectors have given much attention to the question of overcrowding as regards many of these houses.

There were 202 infringements of the Byelaws; 40 of these were for staircases and landings not being artificially lit at night, 28 for rooms being overcrowded, 81 for rooms requiring cleansing and re-decorating, 18 for no proper washing accommodation for clothes, 9 for insufficient water-closet accommodation, and the remainder for the room floors and the bedding being in a dirty condition, etc.

By the end of the year 153 of these infringements had been rectified.

Seamen's Lodging Houses.

There were seven Seamen's Lodging Houses in the City on the Register during the year, containing 27 rooms and 90 beds. There have been seven applications for renewals and new licences. One house was given up at the end of the year and one house was newly licensed.

The Byelaws in force regulating these houses have been carried out, and the houses generally kept in good and clean condition. Ninety-two visits have been made.

The addresses of and particulars relating to these houses are as follows:

Address.	Accommodation. Sleeping Rooms.	Lodgers.
129/131, Trafford Road	4	17
69, Monmouth Street	6	12
53, Trafford Road	5	26
31, Gledhill Street	1	1
68, Monmouth Street	4	8
71, Goodiers Lane	4	14
61, Trafford Road	3	12

The keepers of these houses are not required to submit a Return of the number of Seamen sleeping on the premises, but it is the general impression from the visits made by the Inspectors that these houses are not used to the fullest extent. This is no doubt due to the slackness of trade in the shipping business.

Workshops.

At the end of the year there were 843 workshops on the register. These have been regularly inspected by the Lady Inspector of Workshops and by the District Inspectors, the Lady Inspector visiting those workshops where females are employed and the District Inspectors visiting those premises where males only are employed.

Two hundred and twenty-three defects were found in the workshops, the particulars being given in Table B. The chief defect was want of cleanliness both in the workshops and bakehouses, which was found in 107 cases and 116 cases respectively. Twenty notices were served, and in the other case the tenants were cautioned and the defects remedied.

Re OUTWORKERS.—The women outworkers' premises are visited by the Lady Inspector of Workshops, and those of the men by the District Inspectors.

During the year 199 visits have been paid.

During this year the Lady Inspector of Workshops has inspected 713 Fish and Chip Restaurants, where women are employed, to ascertain the conditions as to cleanliness and sanitation.

A number of these premises are still being found where the yard space has been enclosed, thereby preventing free ventilation to the sanitary accommodation. Where these have been found, the tenants have been warned, and the structures removed: 17 notices were served for other defects.

FACTORIES, WORKSHOPS, WORKPLACES AND HOME-WORK.

A.—Inspection.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS DURING THE YEAR 1932.

Premises. (1)	Number of Inspections. (2)	Written Notices. (3)	Prosecutions. (4)
Factories (Including Factory Laundries)	78	2	..
Workshops (Including Workshop Laundries.)	2727	20	..
Workplaces (Other than Outworkers' premises included in Part 3 of this Report.)	713	17	..
Total	3518	39	..

B.—Defects Found.

Premises.	Number of Defects.			Number of Prosecutions.
	Found.	Remedied.	Referred to H.M. Inspector.	
(1)	(2)	(3)	(4)	(5)
Nuisances under the Public Health Act—*				
Want of cleanliness	149	149	7	..
Want of ventilation	6	6	3	..
Overcrowding	1	1	..	..
Want of drainage of floors	23	25	1	..
Other nuisances	17	15	..	..
Sanitary accommodation insufficient	11	7	6	..
unsuitable or defective	15	14	10	..
not separate for sexes	1	1	2	..
Offences under the Factory and Workshops Act—				
Illegal occupation of underground bakehouse (s. 101).	..	..	..	..
Breach of special sanitary requirements for bakehouses (ss. 97 to 100)	..	..	..	..
Other offences (excluding offences relating to outwork which are included in Part 3 of this Report).	..	..	..	..
Total	223	218	29	..

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* Including those specified in sections 2, 3, 7 and 8 of the Factory and Workshop Act as remediable under the Public Health Acts.

C.—Home Work.

NATURE OF WORK.	OUTWORKERS' LISTS, SECTION 107.											Number of Inspections of Outworkers' premises.	OUTWORK IN UNWHOLESOME PREMISES, SECTION 108.			OUTWORK IN INFECTED PREMISES, SECTIONS 109, 110.		
	Lists received from Employers.						Number of Addresses of Outworkers received from other Authorities.	Number of Addresses of Outworkers forwarded to other Authorities.	Notices served on Occupiers as to keeping or sending lists.	Prosecutions.								
	Sending twice in the year.			Sending once in the year.														
	Lists.	Outworkers.		Lists.	Outworkers.													
		Con-tractors.	Work-people.		Con-tractors.	Work-people.				Failing to keep or permit inspection of lists.	Failing to send lists.		Instances.	Notices served.	Prosecutions.	Instances.	Orders made, S. 110.	Prosecutions, SS. 109, 110.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
* Wearing Apparel—																		
1. Making, &c.	28	20	116	..	..	..	176	106	..	..	..	195	..	..	..	..	..	..
2. Cleaning and washing	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lace, lace curtains and nets	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Artificial flowers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nets, other than wire nets	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tents	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sacks	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Furniture and upholstery	..	..	..	..	..	..	2	..	..	..	..	2	..	..	..	..	..	..
Fur pulling	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Feather sorting	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Umbrellas, &c.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Carding, &c., of buttons, &c.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Paper bags and boxes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Basket making	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Brush making	2	..	2	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..
Racquet and tennis balls	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Stuffed toys	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
File making	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Electro plate	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cables and chains	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cart gear	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Locks, latches and keys	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Anchors and grapnels	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pea picking	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	30	20	118	..	..	..	178	106	..	..	..	199	..	..	..	..	..	..

* List of Industries as prescribed by Home Office.

D.—Registered Workshops.

Workshops on the Register (s. 131) at the end of the year. (1)	Number. (2)
Tenement Workshops	13
Domestic Workshops	208
Laundries	13
Workshop Bakehouses	250
Other Workshops	359
Total number of Workshops on Register	843

E.—Other Matters.

Class. (1)		Number. (2)
Matters notified to H.M. Inspector of Factories— Failure to affix abstract of the Factory and Workshop Act (s. 133) ..		15
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (s. 5).	Notified by H.M. Inspector.	29
	Reports (of action taken) sent to H.M. Inspector. .	27*
Other		..
Underground Bakehouses (s. 101)— Certificates granted during the year		..
In use at the end of the year		..

* Including reports of action taken in cases notified in previous year.

F.—Additional Sanitation for Retail Bakehouses, Sections 97—102.

Number of such premises in the district, 250.
Note as to their sanitary condition. Ground floor bakehouses—Good.
Action taken as to retail bakehouses in 1932, three notices served.

Action taken.	No. of Defects found.	Notices served.	Legal Proceedings.	Defects remedied	Remarks.
As to Closets, &c., Sec. 97		..	..	..	
As to Water Cisterns, Sec. 97	..	..	..	..	
As to Drain Openings, Sec. 97	..	..	..	..	
As to Limewashing, &c., Sec. 97	101	5	..	101	
As to Sleeping Places, Sec. 100	..	..	..	..	

Any proceedings under Section 98 as to retail bakehouses sanitarily unfit, Nil.

UNDERGROUND BAKEHOUSES.

Number of such premises in district, one not in use at present.
Number certified by District Council under Section 101 (2) in 1932, Nil.

BAKEHOUSES, 1932.

Registered	250
Added to Register	20
Discontinued	21
Changed Hands	15
Number of Underground Bakehouses Certified by Authority	1 but not at present in use.
Total Number of Ovens	334
Employees—Males	297
,, Females	512
Notices Served	5

Smoke Nuisance.

Particulars as to smoke nuisance caused by firms during the year 1932 and dealt with by the Health Committee :—

Thirteen Notices were issued under the Public Health Act.

Two firms were summoned by the Health Committee in respect of smoke nuisances during the year. One firm was fined 21s. costs and the other firm £5 and an Order to abate made.

During the year 3,393 smoke observations have been made as against 3,366 in the year 1931, and 3,331 in the year 1930.

One hundred and seventeen stokers and others were cautioned by the Inspector for negligence in firing the furnaces under their charge, at the same time 21 firms were reported to and dealt with by the Health Committee, also 21 cautionary Notices were issued to firms with a table of smoke observations taken from their chimneys.

Several chimneys have been raised during the year in connection with small workshops.

TABLE SHOWING THE NUMBER OF HALF-HOURLY OBSERVATIONS TAKEN DURING THE YEAR 1932.

Minutes of Black Smoke emitted in half-an-hour.	No. of Observations Taken.	Percentage to Total.
No Black Smoke	2,679	78·9
One Minute	693	20·5
Two Minutes	7	0·2
Three Minutes	4	0·1
Over Three Minutes	10	0·3
Total Observations	3,393	100·0

Manure Receptacles, and Removal of Manure and other Offensive Matter.

The Byelaws with respect to receptacles for manure and the weekly removal of manure, filth, or other offensive or noxious matter, which came into operation towards the end of 1909, have been enforced during the past year, and special attention has been paid to stable yards where manure quickly accumulates.

The Byelaws as regards the regular removal of manure have been well observed.

Canal Boats Acts.

Number of canal boats inspected	168
Number of canal boats conforming to Acts	166
Number of canal boats with one or more infringements	2
Total number of infringements	5
Registration	..
Absence of certificates	1
Dilapidation of certificate	..
Marking	1
Overcrowding	..
Separation of sexes	..
Cleanliness	..
Ventilation	..
Ventilators obstructed	..
Painting	1
Provision of water vessel	..
Water vessels broken	1
Removal of bilge water	..
Boats defective and leaking	..
Dilapidation	..
Stoves defective	..
Stove pipes defective	..
Pumps defective	..
Admittance of Inspector	..
Notification of infectious disease	..
Certificates not identifying owners	..
Loading manure without tight bulkheads	1
Number of notices served	2
Other steps to secure compliance: Two Letters written to owner.	
Detention of boats for cleansing and disinfection	..
Legal proceedings taken	..
Number of boats on register: Not a Registration Authority.	
Canal boats registered to carry (number of persons)	883
Men found on the boats	316
Women found on the boats	19
Children under 12 years found on the boats	7

Drainage Inspection.

The testing and examination of all existing drainage is carried out by this Department. Two Inspectors and four labourers are kept continually at work examining drainage, and the following table gives the detailed results of their labours :—

Number of	tests made	670
,,	applications from householders	10
,,	houses affected by the tests	821
,,	notices and reports issued	315
,,	notices and reports complied with	309
,,	drain inlets opened and cleared	2,418

Insanitary Conditions Found.

Defects.

Number of	drains wholly and partly choked	791
,,	drains defectively constructed	284
,,	gully traps badly laid	32
,,	drains defectively trapped	28
,,	waste pipes defectively trapped or connected to drains	27
,,	downspouts connected to drains	30
,,	soil pipes with leaking joints or defectively ventilated	53
,,	defective water closets	101
	Total defects	1,346

Reconstruction of Drains and the Construction of New Drains.

Number of	tests applied	586
,,	houses affected	547
,,	passage main drains affected	25

MODE WHEEL AMBULANCE AND DISINFECTING STATION.

The Ambulance and Disinfecting Station situated in Mode Wheel Road is under the control of the Medical Officer of Health. The Station is used for the following purposes :—

(*a*) The disinfecting of bedding, clothing, etc., from the homes of persons suffering from infectious diseases by means of high-pressure steam disinfection.

(*b*) As a depôt for the disinfectors employed in disinfecting houses, schools, and public institutions in which a case of infectious disease has occurred.

(*c*) As a station for the bathing of verminous persons and the disinfection of their clothing.

(*d*) The bathing of persons suffering from scabies (particularly school children), and the disinfection of their clothing.

(*e*) The bathing of midwives who have been in contact with cases of puerperal fever, and the disinfection of their clothing and instruments.

(*f*) As a garage for the three motor ambulances required to take persons to and from Hospital and the three motor vans used to collect and deliver bedding, etc., before and after disinfection, and in connection with the cleansing of conveniences. The Station is also used as a repair depôt for the whole of the motor vehicles used in the Department.

The Staff employed at the Station is as follows :—

Foreman.
Caretaker.
Motor Mechanic.
Four Disinfectors.
Four Drivers.

The following is a summary of the work done at the Mode Wheel Disinfecting Station during 1932 :—

	Salford Cases.	Out-District Cases.	Total Cases.
AMBULANCES.			
Number of journeys removing patients to Hospital	1,333	434	1,767
Number of journeys removing patients from Hospital to their homes	323	—	323
Number of houses visited by ambulances removing bedding for disinfection	797	35	832
VANS.			
Number of houses visited by vans returning bedding after disinfection.................	1,750	169	1,919

In addition, 840 journeys to Hospital for purposes other than removal of patients were made by motor vehicles, and 17 journeys were made for the purpose of taking home children after operative treatment for tonsils and adenoids. 299 journeys were made in connection with the treatment of children suffering from scabies. There were also 685 journeys for miscellaneous purposes.

DISINFECTIONS.

Number of houses disinfected	1,865
,, rooms disinfected	5,181
,, bundles of clothing and bedding disinfected	6,629*
,, books disinfected	357
,, schools disinfected	10
,, hospitals disinfected	37
,, ships disinfected	2

*Including 3,224 for Hope Hospital

BATHING AND DISINFECTION OF CLOTHING.

Midwives	26
Smallpox convalescents	Nil.
Verminous persons	7
Children suffering from scabies	1,722

The disinfection at the Mode Wheel Disinfecting Station of bedding and clothing from Hope Hospital was continued during 1932.

MOTOR AMBULANCE SERVICES.

The following is a summary of the Motor Ambulance Services provided in Salford :—

(1) HEALTH DEPARTMENT—

Number of motor ambulances	3

These ambulances are stationed at the Mode Wheel Disinfecting Station, Weaste, and are used principally for conveying cases of infectious disease to and from the Ladywell Sanatorium, the Nab Top Sanatorium, and the homes of Salford residents. They are also used for a similar purpose, so far as the Ladywell Sanatorium only is concerned, in the case of a number of out-districts. In addition, they are used for conveying to their homes : (*a*) school children who have been operated upon for the removal of tonsils and adenoids, and (*b*) school children suffering from scabies who have been bathed at the Mode Wheel Disinfecting Station.

(2) PUBLIC ASSISTANCE DEPARTMENT—

Number of Motor Ambulances	3
Semi-ambulance	1

These vehicles are stationed at the Public Assistance Department Eccles New Road, Salford. The ambulances are used for the conveyance of poor law patients only, including maternity cases, while the semi-ambulance is used for conveying children to and from the Culcheth Cottage Homes, and sitting-up cases.

(3) Police Department—

Number of motor ambulances	4

These ambulances are stationed at the Fire Station, Crescent, Salford. They are used primarily for accidents, but are also used occasionally for private cases.

PROPAGANDA.

The value of "Health Weeks" is directly and entirely dependent upon the interest displayed by the public in the activities organised during these intensive campaigns and their attendance at such meetings, cinema displays, or exhibitions as may be arranged. In the natural order of things, one cannot hope that public interest will be strongly maintained in a subject to which their attention is called too frequently. Therefore, as the last "Health Week" organised in Salford was held in November, 1931, it was not considered to be necessary or desirable to arrange a similar week in 1932, but provisional approval was given to a proposal to hold a "Health Week" in November, 1933.

The distribution of the periodical "Better Health" was continued during 1932. This magazine, published at monthly intervals, is distributed free of charge at practically no cost to the rates, as a considerable income is derived from advertisements. Copies are supplied to all the large firms in the city for distribution to their employees and, by arrangement with the Education Department, each School Teacher is provided with a copy.

The displays which have been given in the windows on the ground floor of the Health Offices in Regent Road for five years, were continued during 1932.

Sanitary Conveniences.

There are 21 conveniences for Males and three for Females in the City, under the control of the Health Committee, namely:—

SITUATION.	MALES.				FEMALES.		
	Urinal Stalls	Water Closets	Wash Basins	Attendant	Water Closets	Wash Basins	Attendant
Trinity Market	6	3	3	1	3	3	1
Trafford Road (Eccles New Road corner)	15	4	4	1	..	..	..
Trafford Road (Ordsall Park) ..	12	4	6	1	..	..	..
Church Street (near the corner of Broad Street)	10	2	3	1	3	3	1
Cross Lane	..	..	..	..	4	4	1
Oldfield Road (Corner of Chapel Street)	6	..	..	..	..	..	..
Liverpool Street	4	..	..	..	..	..	..
Bolton Road (Junction of Claremont Road)	4	..	..	..	..	..	..
Broughton Road	16	..	..	..	..	..	..
Windsor Bridge	6	..	..	..	..	..	..
Blucher Street	3	..	..	..	..	..	..
Stevenson Street	3	..	..	..	..	..	..
Park Lane	5	..	..	..	..	..	..
Broad Street	3	..	..	..	..	..	..
Greengate Arch	6	..	..	..	..	..	..
Eccles New Road	6	..	..	..	..	..	..
Broughton Bridge	8	..	..	..	..	..	..
Frederick Road	4	..	..	..	..	..	..
Moor Lane	6	..	..	..	..	..	..
Cross Lane	5	..	..	..	..	..	..
Albert Park	6	..	..	..	..	..	..
Crescent, near Victoria Arch	6	..	..	..	..	..	..

TABLE G 3.

Cases heard before the Magistrates during 1932.

Offence.	No. of Cases.	Decision of Magistrates.	Total Fines (without costs). £ s. d.
For contravening the Animals (Landing from Ireland, Channel Islands, and Isle of Man) Order, by removing 38 imported sheep from premises in Salford during the prescribed period of detention.	1	Fined £1 18s. and £1 1s. costs.	1 18 0
For permitting the movement of such sheep.	1	Fined 3d. each sheep (9s. 6d.).	0 9 6
For failing to move certain imported sheep without unnecessary delay and direct to the authorised place of destination.	1	Fined £1 4s.	1 4 0
For failing to remove sheep to place of destination specified on the licence.	1	Fined 2d. each sheep (205). £1 14s. 2d.	1 14 2
For not using a mechanical stunning instrument, in contravention of Byelaw in respect of Slaughterhouses.	2	1 Fined 10s. 1 Dismissed.	0 10 0
For aiding and abetting in the above offence.	2	1 Fined £3. 1 Dismissed.	3 0 0
For selling whisky containing 5·4 per cent of added water.	1	Fined £5.	5 0 0
For selling milk deficient of fat........	2	1 Fined £2 10s. 1 Fined £1.	3 10 0
For aiding and abetting in above offence	1	Fined £2 and £2 2s. costs.	2 0 0
For exposing for sale Dutch tomatoes and not having a show ticket bearing the indication of origin.	3	1 Fined £3 and £1 1s. costs. 1 Fined £2 and £1 1s. costs. 1 Fined £1 and £1 1s. costs.	6 0 0
For selling stoneless damson jam labelled "full fruit standard" and deficient of 21 per cent of the minimum amount of damsons.	2	1 Fined 5s. 1 Dismissed.	0 5 0
For giving a false label describing same.	1	Dismissed.	—
Carried forward	18		£25 10 8

CASES HEARD BEFORE THE MAGISTRATES DURING 1932—*Continued.*

Offence.	No. of Cases.	Decision of Magistrates.	Total Fines (without costs). £ s. d.
Brought forward................	18		25 10 8
For emitting dense black smoke from mill chimney.	2	1 Fined £5 and an Order to Abate made. 1 Fined 21s. costs.	5 0 0
For failing to properly pave and make impervious the yard surface of dwelling house premises.	2	Fined 10s. each.	1 0 0
For contravening Sublet House Byelaws by failing to cleanse and redecorate walls and ceiling of the rooms throughout the house.	1	Fined 10s.	0 10 0
For failing to comply with Notice to repair defective roofs of dwelling house premises.	2	1 Fined £2 10s. and an Order to Abate made. 1 Fined £1 and an Order to Abate made.	3 10 0
For failing to comply with Notice to cleanse floors, bedding and furnishings in dwelling house.	1	Fined £5.	5 0 0
For failing to comply with Notice to remove rubbish, etc.	1	Order to Abate made.	—
For assaulting two Sanitary Inspectors whilst in the execution of their duties.	3	Sentenced to 7 days imprisonment for the 3 offences.	—
	30		£40 10 8

Housing, Town Planning, &c., Act.

HOUSE-TO-HOUSE INSPECTIONS UNDER THE HOUSING CONSOLIDATED REGULATIONS, 1925.

Two wards, namely, Claremont and Kersal, were examined during 1932 in accordance with the above-named Regulations, the total number of houses examined being 4,855.

It is interesting to note that of these only 26 had less than four rooms and all but 31 were provided with a separate water closet.

Full details will be found in the following table :—

HOUSING, TOWN PLANNING, &c., ACT.

HOUSE-TO-HOUSE INSPECTIONS, 1932.

	CLAREMONT WARD.	KERSAL WARD.	TOTAL.
Number of houses inspected	2,223	2,632	4,855
Number of dwellings with 1 room	—	—	—
,, ,, 2 rooms	15	6	21
,, ,, 3 rooms	5	—	5
,, ,, 4 rooms	233	275	508
,, ,, 5 rooms	121	123	244
,, ,, 6 rooms	344	581	925
,, ,, over 6 rooms	1,505	1,647	3,152
Closet Accommodation :—			
Water Closet	2,223	2,632	4,855
Pail Closet	—	—	—
Privy Midden	—	—	—
Number of houses with closet accommodation in common with other dwelling	19	12	31
Ash Accommodation :—			
Metallic Receptacle	2,223	2,632	4,855
Tub	—	—	—
Ashpit	—	—	—
Unsatisfactory	—	—	—
In common	—	—	—
No accommodation	—	—	—
Defects :—			
Insufficient light and ventilation	—	4	4
Defective drainage	—	—	—
No drainage	—	—	—
Serious dilapidation	—	—	—
Back-to-back houses	4	3	7
Houses unfit for habitation	—	7	7
Number of representations made to Local Authority with a view to making Closing Orders	—	—	—
Number of Closing Orders made	—	—	—
Number of dwelling-houses put into fit state for human habitation after making Closing Orders		—	—
Defects remedied without Closing Orders	—	—	—

Housing Conditions.

Year ended 31st December, 1932.

(a) GENERAL STATISTICS.

Area (acres)	**5,202**
Population (1932) (Registrar General's Estimate)	**220,300**
Number of Inhabited Houses (1932–1933, April)	**51,148**
Number of families or separate occupiers (1932)	—
Rateable Value (1932–1933, April)	**£1,116,699**
Sum represented by a penny rate (Estimate)	**£4,300**

(B) HOUSING STATISTICS.

1. Inspection of dwelling-houses during the year :—	
1. (*a*) Total number of dwelling-houses inspected for housing defects (under P.H. or Housing Acts)	7,575
(*b*) Number of inspections made for the purpose	21,199
2. (*a*) Number of dwelling-houses (included under sub-head (1) above) which were inspected and recorded under the Housing Consolidated Regulations, 1925	4,855
(*b*) Number of inspections made for the purpose	4,855
3. Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation	Nil.
4. Number of dwelling-houses (exclusive of those referred to under the preceding sub-head) found not to be in all respects reasonably fit for human habitation	5,380
2. Remedy of defects during the year without service of formal Notices :—	
Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers	988
3. Action under Statutory Powers during the year :—	
A. Proceedings under Sections 17, 18 and 23 of the Housing Act, 1930 :	
1. Number of dwelling-houses in respect of which notices were served requiring repairs	Nil
2. Number of dwelling-houses which were rendered fit after service of formal notices :—	
(*a*) by owners	Nil
(*b*) by Local Authority in default of owners	Nil
B. Proceedings under Public Health Acts :	
1. Number of dwelling-houses in respect of which notices were served requiring defects to be remedied	3,008
2. Number of dwelling-houses in which defects were remedied after service of formal notices :—	
(*a*) by owners	1,214
(*b*) by Local Authority in default of owners	Nil
C. Proceedings under Sections 19 and 21 of the Housing Act, 1930 :	
1. Number of dwelling-houses in respect of which Demolition Orders were made	Nil
2. Number of dwelling-houses demolished in pursuance of Demolition Orders	Nil

D. Proceedings under Section 20 of the Housing Act, 1930 :

1. Number of separate tenements or underground rooms in respect of which closing orders were made	Nil
2. Number of separate tenements or underground rooms in respect of which closing orders were determined, the tenement or room having been rendered fit	Nil

E. Proceedings under Section 3 of the Housing Act, 1925 :

1. Number of dwelling-houses in respect of which notices were served requiring repairs	Nil
2. Number of dwelling-houses which were rendered fit after service of formal notices :—	
(*a*) by owners	Nil
(*b*) by Local Authority in default of owners	Nil
3. Number of dwelling-houses in respect of which closing orders became operative in pursuance of declarations by owners of intention to close.........................	Nil

F. Proceedings under Sections 11, 14 and 15 of the Housing Act, 1925 :

1. Number of dwelling-houses in respect of which Closing Orders were made..................................	Nil
2. Number of dwelling-houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit	Nil
3. Number of dwelling-houses in respect of which Demolition Orders were made.................................	Nil
4. Number of dwelling-houses demolished in pursuance of Demolition Orders................................	Nil

FITNESS OF HOUSES.

No special difficulties have been found in action under the Public Health Acts. The property owners in general show a disposition to comply with the Notices served under these Acts.

The whole of the property in the City is supplied on the constant system with water from the Corporation mains. With the exception of a very few houses in common courts, each house is supplied with an internal water supply.

BYELAWS.

In general, the existing Byelaws and Local Acts are found to be adequate, and no special difficulties have been experienced in their enforcement.

Re-Housing.

The City and County Borough of Salford (Greengate Area) Clearance Order, 1932.

The City and County Borough of Salford (Chapel Street No. 1) Clearance Order, 1932.

The City and County Borough of Salford (Chapel Street No. 2) Clearance Order, 1932.

The City and County Borough of Salford (Chapel Street No. 3) Clearance Order, 1932.

The City and County Borough of Salford (Chapel Street No. 4) Clearance Order, 1932.

As a result of a detailed inspection and a census of the population of the Areas, representations were made to the Health Committee that the narrowness, closeness and bad arrangement, or the bad condition of the streets and houses, or groups of houses, within the areas, or the want of light and ventilation or proper conveniences, or any other sanitary defects, or one or more such causes, were dangerous or injurious to the health of the inhabitants, either of the buildings in the areas or of the neighbouring buildings.

With respect to the Greengate Area, a representation was made by the Medical Officer of Health on the 23rd July, 1931. This was approved by the Council on the 12th August, 1931, declaring the area so defined to be a Clearance Area. On the 6th April, 1932, the City Council determined by a resolution to proceed to secure the clearance of the area by ordering the demolition of the buildings thereon, and this action was approved on the 4th May, 1932.

The property dealt with by the above mentioned Order comprised the following premises, viz. :—

3, 5, 7, 9, Boond Street—(Coal yard and stables).
11, 11A, 13/37, Boond Street.
8/10, 16/18, Queen Street.
6, 8, 12, 14, 18, 20, 22, 24, 28, 30, 34, Fleet Street.
7, 11, 13, 17, 19, 23, 25, Fleet Street.
2A, 2/12, 10A, 9, Hutchinson Street.
7/25, 4/8, 12/14, 18/20, 24, Ashton Street.
and Stables in Ashton Street.

The number of occupied houses in this area was 58. The number of families occupying these houses was 79, comprising 263 persons.

With respect to the Chapel Street Areas Nos. 1, 2, 3 and 4, the Medical Officer of Health made representations to the Health Committee on the 21st January, 1932, in similar form to that of the Greengate Area. At a meeting of the City Council held on the 3rd February, 1932, a resolution was passed declaring the four areas to be defined as Clearance Areas.

At a meeting of the Council on the 6th April, 1932, the Council determined by a resolution to proceed to secure the clearance of the areas by ordering the demolition of the buildings thereon, and this action was approved on the 4th May, 1932.

The properties dealt with by the above mentioned Orders comprised the following premises, viz. :—

CHAPEL STREET NO. 1 AREA—

17 and 19, Spaw Street.
1, 3, 5 and 7, Browncross Street.
3 and 5, Johnson Street.

Seven of the above were occupied houses and one place used as a storeroom.

There were 8 families, comprising 26 persons, occupying the houses.

CHAPEL STREET AREA NO. 2—

23/29, Browncross Street.
12, Yorkshire Street.
11/13 and 19/31, Yorkshire Street.
10/36, Quay Street.
1/37, Quay Street.
2 and 6/30, Wood Street.
2, Back Garden Street.
143/149, Chapel Street.

The number of houses occupied was 60 and there were also 10 other premises.

There were 91 families, comprising 320 persons.

CHAPEL STREET AREA NO. 3—

105/115, Chapel Street, and derelict houses in court at rear.

The number of houses and shops occupied was 5 and one other premises.

There were 5 families comprising 19 persons.

CHAPEL STREET AREA NO. 4—

7/27 and 10/20, Barlow's Croft.
12/20 and 5/11, Booth Street.

There were 26 occupied houses, consisting of 26 families, comprising 110 persons.

A Public Inquiry was held on the 14th June, 1932, and, with minor modifications, the Orders were confirmed by the Ministry of Health on the 17th October, 1932, and came into operation on the 10th December, 1932. Notices to Quit the premises were served on all the occupiers between the 19th to 21st December, 1932. These Notices expire on the 10th February, 1933.

The gross area of the Greengate site is 1·07 acres, the nett area ·75 acres, the gross density 58·8 houses per acre and the nett density 84 houses per acre.

The gross area of the Chapel Street No. 1 site is ·124 acres, the nett area ·07 acres, the gross density 64·5 houses per acre and the nett density 114·2 houses per acre.

The gross area of Chapel Street No. 2 site is 1·472 acres, nett area ·95 acres, the gross density 44·2 houses per acre and the nett density 68·4 houses per acre.

The gross area of Chapel Street No. 3 site is ·15 acres, nett area ·11 acres, gross density 40 houses per acre and nett density 54·5 houses per acre.

The gross area of Chapel Street No. 4 site is ·36 acres, nett area ·27 acres, the gross density 72·2 houses per acre and the nett density 96·3 houses per acre.

A scheme for the erection of 180 houses to rehouse the inhabitants of the five areas concerned on two sites, namely, Gerald Road and Wheater's Field, Lower Broughton Road, was approved by the Council on the 3rd February, 1932, and this was confirmed by Order of the Minister of Health, the 17th October, 1932. These are now being erected under contract dated 2nd June, 1932.

The area of land on the Wheater's Field site consisted of 3·4 acres. This land was purchased 4th June, 1930. The number of houses to be erected is 96. The gross density equals 24 houses to the acre. The area of land on the Gerald Road site equals 4·115 acres. The date of purchase was 8th May, 1925. The number of houses to be erected is 84 and the density equals 20 houses per acre.

On both areas the same type of houses is being built and the houses are similar to the 112 houses built on the Gerald Road site. On the Gerald Road site the houses are built in blocks of 2, 4, 6 and 8 houses, and at Wheater's Field 4, 6 and 8 houses per block. The end houses have three bedrooms and the remainder are two-bedroomed houses. In all cases, the front bedrooms comprise 1,240 c. ft. capacity. The second capacity of the bedroom varies, some bedrooms being 920 c. ft. in volume, others 725 c. ft. and the remainder 690 c. ft. The capacity of the third bedroom is 480 c. ft.

The work of building was commenced on the 1st June, 1932.

None of the houses was ready for occupation by the end of the year, but it is expected that the removal of the tenants from the insanitary areas to these houses will commence in a short time.

TABLE G. 2.

NEW HOUSES ERECTED AND HOUSES DEMOLISHED IN 1932.

Wards.	Houses erected.	Houses demolished.
Kersal	46	—
Albert Park	—	—
Mandley Park	20	—
St. Matthias'	—	—
Trinity	—	—
Crescent	1	—
Regent	—	—
Ordsall Park	—	—
Docks	—	—
Charlestown	—	—
St. Thomas'	—	—
St. Paul's	—	—
Langworthy	3	—
Seedley	15	—
Weaste	2	—
Claremont	58	—
	145	—

All these houses have been built by private enterprise.

Certificates as to Housing Conditions.

Under the terms of the circular letter issued by the City Treasurer, with reference to the issue by the Medical Officer of Health of certificates to the effect that certain families were not living under sanitary conditions, 129 applications have been made and in 90 cases certificates were issued.

TABLE G. 4.

Register of Work Done—Year ending December 31st, 1932.

No. of Complaints received		3745
Inspections of	Dwelling-houses	7575
	,, ,, (under Housing, &c., Act)	4855
	Visits *re* Unhealthy Areas	756
	Schools	541
	Factories	78
	Canal Boats	168
	Common Lodging-houses (Day)	378
	,, ,, ,, (Night)	4
	Sub-let ,, ,, (Day)	1056
	,, ,, ,, (Night)	384
	Seamen's Lodging-houses (Day)	92
	,, ,, ,, (Night)	—
	Van Dwellings	81
	Tips	86
	Bakehouses (Day)	626
	Workshops (Day)	1139
	,, (Night)	431
	Domestic Workshops	333
	Restaurant Kitchens	97
	Outworkers' Premises	199
	Ice Cream Shops	684
	,, Stalls	2
	Fried Fish Dealers	713
	Smallpox Contacts	—
	Diphtheria Contacts	68
	Scarlet Fever Contacts	78
	Enteric Fever Contacts	8
	Miscellaneous	4535
	Laundries	33
	Urinals—Public	509
	Stables	633
	Re Infectious Diseases	1342
	Theatres, Cinemas, &c. (Day)	129
	,, ,, (Night)	72
Re-inspections		13624
Action taken	Statutory Notices issued	2447
	,, ,, complied with	1908
	,, ,, cancelled	58
	Informal Notices issued	1372
	,, ,, complied with	1166
	,, ,, cancelled	65
	Letters written	3068
	Summonses issued	30

A.—HOSPITALS PROVIDED BY THE SALFORD CORPORATION.

Name and situation of Hospital.	Purpose.	Services and Number of Beds provided.				Classification and Number of Medical and Nursing Staffs.		Arrangements for Employment of Consultants.	Special Departments.	Arrangements for Surgical Operations.	Arrangements for Pathological Examinations.
		Service.	Beds.			Classification.	No.				
			Male.	Female.	Total.						
Hope Hospital, Pendleton, Salford	General	General Medical	51	76	127	Medical Superintendent	1	Consultants appointed as follows: (a) Visiting Physician. (b) Visiting Specialist in Children's Diseases. (c) Visiting Gynæcologist. (d) Visiting Orthopædic Surgeon.	X-Ray. Massage. Electro-therapeutics. Ultra-violet radiation. Orthopædic. Pathological. Electro-cardiographic.	Surgical operations for all classes of cases are performed at the Hospital.	All pathological material examined either in the Municipal Laboratory or in the Hope Hospital Laboratory under direction of City Pathologist.
		General Surgical	114	99	213	Deputy Medical Superintendent	1				
		Children	..	..	146	Anæsthetist and Radiologist	1				
		Maternity	..	68	68	Resident Medical Officer	1				
		Tuberculosis	35	..	35	Resident Surgical Officer	1				
		Chronic Sick	143	165	308	Assistant Medical Officers	4				
		Mental	73	110	183	Matron and Nursing Staff	238				
		Venereal	..	7	7						
		Infectious Diseases (Children)	..	..	12						
		Tonsils and Adenoids (Children)	..	..	12						
		Puerperal Pyrexia	..	6	6						
		Total			1,117						
Ladywell Sanatorium, Pendleton, Salford.	Infectious Diseases	Ordinary Infectious Diseases	..	..	217	Medical Superintendent	1	Consultants appointed as follows: (a) For cases of Puerperal Fever and Pyrexia. (b) Visiting Aural Surgeon. (c) Other Consultants called in as required.	..	Surgical operation for affections of the ear, nose and throat are performed at the Sanatorium.	Pathological examinations are carried out at the Municipal Pathological Laboratory.
		Tuberculosis	36	36	72	Assistant Medical Officers	2				
		Puerperal Fever and Pyrexia	..	7	7	Matron and Nursing Staff	66				
		Total			296						
Nab Top Sanatorium, Marple, Cheshire.	Tuberculosis	..	62	58	120	Medical Superintendent	1	..	X-Ray.	No facilities provided. Cases requiring surgical treatment are transferred to other institutions.	..
						Matron and Nursing Staff	15				
Maternity Home and Babies' Hospital, Pendleton, Salford.	Maternity Cases and Sick Infants	Maternity	..	10	10	Medical Officer (part time)	1	Consultant appointed for cases of Puerperal Fever and Pyrexia.	Artificial Sunlight.	No facilities provided. Cases requiring surgical treatment are transferred to Hope Hospital.	..
		Infants	..	..	16	Matron and Nursing Staff	15				
		Total			26						
Drinkwater Park Hospital, Prestwich.	Smallpox Isolation Hospital	..	24	24	48	Staffed as required.		..	..	..	..
Municipal Clinic, Salford	Venereal Diseases	Medical and Surgical	6	..	6	Staffed by Clinic Staff as required.		..	..	Surgical operations are performed at the Clinic.	Pathological examinations are carried out at the Municipal Pathological Laboratory.
Total Number of Beds provided by Salford Corporation					1,613						

B.—VOLUNTARY HOSPITALS SITUATED IN SALFORD.

Name and Situation of Hospital.	Purpose.	Services and Number of Beds provided.				Special Departments.
		Service.	Beds.			
			Male.	Female.	Total.	
Salford Royal Hospital, Salford.	General	General Surgical	87	88	175	X-Ray. Orthopædic. Massage. Ear, Nose and Throat. Genito Urinary. Cardiographic. Pathological. Artificial Sunlight. Physiotherapeutic. Dental. Ophthalmic. Gynæcological. Pre-mental.
		General Medical	31	33	64	
		Skin and Genito-Urinary	4	4	8	
		Children's Cots, Medical and Surgical.	..	..	13	
		Observation Beds	..	..	3	
		Total			263	
Greengate Hospital and Open Air School.	Children	Rickets	..	..	30	Massage.
Total number of beds provided by Voluntary Hospitals in Salford					293	

C.—VOLUNTARY HOSPITALS SITUATED OUTSIDE SALFORD BUT USED BY SALFORD RESIDENTS.

Name and Situation of Hospital.	Purpose.	Services and Number of Beds provided.				Special Departments.
		Service.	Beds.			
			Male.	Female.	Total.	
Manchester Royal Infirmary.	General	General Medical	88	104	192	X-Ray (with Light Therapy and Deep Therapy). Massage (with Diathermy, Electro-therapy, Radiant Heat, etc.); Sunlight. Electrocardiographic. Surgical Tuberculosis. Pernicious Anæmia. Venereal Diseases. Ophthalmic. Skin Diseases. Neurological Surgery. Orthopædics. Gynæcology.
		General Surgical	218	147	365	
		Aural	9	8	17	
		Gynæcological	..	18	18	
		Observation	..	..	9	
		Children under 6 (urgencies)	..	..	13	
		Reserved for Emergency	..	..	26	
		Total			640	
St. Mary's Hospital, Manchester.	Maternity, Gynæcological and Children.	Maternity	..	101	101	Radium. Massage. Ante-natal. Artificial Sunlight. Venereal Diseases (Out-patients only).
		Gynæcological	..	112	112	
		Children	..	..	25	
		Total			238	
Royal Manchester Children's Hospital, Pendlebury, Lancs.	Children	Medical	..	..	90	X-Ray. Massage (with Electrical and Gymnastic Apparatus). Artificial Sunlight. Orthopædic. Pathological.
		Surgical	..	..	90	
		Isolation	..	..	10	
		Total			190	
Ancoats Hospital, Manchester	General	General Surgical	32	31	63	X-Ray. Massage. Pathological. Cardiographic. Orthopædic. Genito-urinary. Venereal Diseases.
		General Surgical (Children)	..	..	15	
		General Medical	15	15	30	
		General Medical (Children)	..	..	6	
		Total			114	
Manchester Victoria Memorial Jewish Hospital, Cheetham, Manchester.	General	General Medical	11	12	23	X-Ray. Artificial Sunlight. Asthma. Gynæcological. Ear, Nose and Throat. Ophthalmic. Massage and Electrical. General Surgical. General Medical.
		Gynæcological	..	4	4	
		General Surgical	14	14	28	
		Ear, Nose and Throat	..	..	14	
		Ophthalmic	..	..	4	
		Pay Beds	..	..	29	
		Total			102	
Manchester Northern Hospital for Women and Children, Cheetham Hill Road, Manchester.	Women and Children	Gynæcological	..	22	22	Dental. X-Ray. Massage. Artificial Sunlight.
		Children:— Medical	..	..	35	
		Surgical	..	..	16	
		Total			73	
Manchester and Salford Hospital for Skin Diseases, Quay Street, Manchester.	Skin Diseases	Skin Cases	24	*30	54	X-Ray. Artificial Sunlight. Venereal Diseases. Tuberculosis of Skin. Private Wards.
		Total			54	
Manchester Ear Hospital, Grosvenor Square, Oxford Road, Manchester.	Diseases of the Ear	..	9	9	18	..
			Children		6	
		Total			24	
Dental Hospital of Manchester, Oxford Road, Manchester.	Dental Treatment	..	..	..	Nil.	Conservation. Prosthetic. Orthodontic. Anæsthetic and Extraction. X-Ray. Pathological.
Manchester Royal Eye Hospital, Oxford Road, Manchester.	Eye Cases	Ophthalmic	61	57	118	Ophthalmia Neonatorum. Sun-Ray. Pathological Laboratory.
		Ophthalmic, Children	..	..	26	
		Ophthalmia Neonatorum (Mothers and Babies).	..	..	7	
		Private Patients	..	..	9	
		Total			160	
Christie Cancer Hospital and Holt Radium Institute, Withington, Manchester.	Cancer, Radium Treatment.	..	..	..	74	..
Total number of Beds provided by Voluntary Hospitals, outside Salford, used by Salford Residents					1,669	

SUMMARY SHOWING INSTITUTIONAL ACCOMMODATION WHICH MAY BE USED BY SALFORD RESIDENTS.

Service.	Institutions provided by Salford Corporation.	Voluntary Institutions in Salford.	Voluntary Institutions outside Salford, but used by Salford residents.	Total.
General Medical	127	64	245	436
General Surgical	213	175	456	844
Children	162	43	300	505
Maternity	78	..	101	179
Tuberculosis	227	..	..	227
Chronic Sick	308	..	..	308
Mental	183	..	..	183
Ordinary Infectious Diseases	229	..	..	229
Puerperal Fever and Pyrexia	13	..	..	13
Smallpox	48	..	..	48
Venereal Diseases	13	..	..	13
Ear, Nose and Throat	12	..	55	67
Gynæcological	..	..	156	156
Skin Diseases, etc.	..	8	54	62
Ophthalmic Diseases	..	..	157	157
Ophthalmia Neonatorum	..	..	7	7
Radium Treatment	..	..	74	74
Observation Beds, etc.	..	3	35	38
Pay Beds	..	..	29	29
	1,613	293	1,669	3,575

NOTE.—It should be clearly understood that apart from the accommodation provided by the Salford Corporation, the accommodation referred to in the above summary is available for the residents of Manchester and contiguous areas.

REGISTER OF WORK DONE—*continued.*

Disinfection—Houses, etc. Disinfected		1865
House Drains	Repaired	231
	Reconstructed	562
	Trapped	241
	Downspouts disconnected from	—
	Blockages removed	1351
Eaves, Gutters, & Downspouts, Passages and Yards	Blockages removed	11
	Inlets opened	1331
Water Closets	New, provided	9
	Ventilated	2
Ash Receptacles	New, provided	1052
	Bricked up or demolished	103
Limewashed	Dwelling-houses	2
	Lodging-houses	26
	,, Sub-let	99
	,, Seamen's	7
	Bakehouses	311
	Workshops	30
	Workshops (Domestic)	1
	Outworkers' premises	—
	Laundries	20
Newly Licensed	Common Lodging-houses	14
,, ,,	Seamen's ,,	7
Newly Registered	Lodging-houses Sub-let	25
	Workshops	12
	,, (Domestic)	6
	Bakehouses	20
	Second-hand Goods Stores	10
	Ice Cream Shops	7
Accumulations Removed	Manure and Refuse	66
	Stagnant Water	11
Smoke Nuisance	Observations taken	3393
	Notices served	13
	Cautionary Notices served	21
Passages and Yards	Flagged	—
	Repaired	224
	Drained	7
Bundles of Infected Bedding and Clothing	Stoved	2888
	Destroyed	73
Animals removed from improper situations		—
Overcrowding of dwellings abated		19
Houses repaired by owners, after Formal Notice		1214
,, ,, ,, ,, ,, Informal ,,		988
Canal Boats painted		2
,, defective		—
,, repaired		2

Destruction of Rats and Mice.

I am indebted to the Director of Public Cleansing, Salford, for the following information, namely :—

The professional ratcatcher is employed throughout the year and uses poisoned baits, limed boards, traps and cages and a gassing machine as means of rat destruction.

In the course of the past year the total visits to dwelling houses, schools, shops, offices, works, stores and other premises were 691, whilst 867 live rats were caught.

Agents and owners of premises frequently apply for the assistance of the ratcatcher whilst structural repairs are being carried out.

The refuse tips and depôts of the department are kept under observation and measures are taken to prevent the increase of rats.

National Rat Week was held in Salford from 7th to 12th November, 1932.

The co-operation of owners and occupiers of premises was invited and assistance offered free of charge. Copies of the Ministry's Bulletin No. 30 were obtained and distributed.

Announcements made in the local Press stressed the great loss suffered by the community through the destruction of foodstuffs and property by rats, and the possibilities of the spread of disease by their agency.

Only a few complaints of premises being infested by rats were received during Rat Week, but these were of such a nature as to require the employment of additional ratcatchers.

(C)—GENERAL PROVISION OF HEALTH SERVICES.

Hospital Services.

The people of Salford avail themselves of the hospital accommodation provided by the Salford Corporation and of the voluntarily provided hospitals of both Salford and Manchester. The interleaved tabulation contains particulars of the hospital services available for Salford residents, distinguishing between hospitals provided by the Corporation and voluntary institutions.

Important additions to voluntary hospital accommodation were made during 1932 as follows:—

St. Mary's Hospital, Manchester	27 beds.
Manchester Victoria Memorial Jewish Hospital	32 beds.

The new Christie Cancer Hospital and Holt Radium Institute, Withington, Manchester, was opened during 1932. This Hospital contains 74 beds.

Outdoor Assistance to the Poor.

The amount distributed by way of outdoor assistance to the poor in Salford during the year ending March 31st, 1933, was approximately £102.595.

Particulars relating to the Poor Law Medical Out-relief Districts are set out in the appended tabulation:—

MEDICAL OUT-RELIEF DISTRICTS.

No. of District.	Area served.	District Medical Officer.
1.	*District*—Such portion of the former Township of Salford as is comprised within the following boundary:—Commencing at a point in the River Irwell at the Salford Royal Hospital end of the Crescent, easterly along Whitecross Bank and Chapel Street, thence along St. Stephen Street, King Street, Norton Street, and Greengate to the River Irwell at the Salford Bridge; thence to the left along the River Irwell and the pre-existing Township boundary to the point first named.	Dr. Stanley Hodgson.
2.	*District*—All that part of the former Township of Salford comprised within the following boundary:—Commencing at Windsor Bridge, thence along the Manchester, Bury and Bolton Canal to the pre-existing boundary of the Townships of Salford and Pendleton, along such boundary through Peel Park to the River Irwell, along the River Irwell to a point nearest the Crescent, thence along the Crescent and Chapel Street to St. Stephen Street, along St. Stephen Street, King Street, Norton Street, Greengate and Chapel Street to Salford Bridge, to the right along the River Irwell to the Manchester, Bury and Bolton Canal, and along such Canal to the point first named.	Dr. Stanley Hodgson.

MEDICAL OUT-RELIEF DISTRICTS—*Continued.*

No. of District.	Area Served.	District Medical Officer.
3.	*District*—All that part of the former Township of Salford comprised within the following boundary, viz.:—Commencing at Regent Bridge, along the centre of Regent Road, Trafford Road, and Broadway, to the site of the old Racecourse, thence along the northern boundary of such site to the Manchester Ship Canal, thence along the said Ship Canal and the River Irwell to the point first named.	Dr. S. J. Yeates.
4.	*District*—Commencing at Windsor at the point dividing the former Townships of Pendleton and Salford, thence along the pre-existing Township boundary to the Manchester, Bury and Bolton Canal, along such Canal in a south-easterly direction to the River Irwell, along the River Irwell to Regent Bridge, thence along Regent Road to Trafford Road, along Trafford Road and Broadway and the north-west side of the site of the old Racecourse to the Manchester Ship Canal, along the said Ship Canal to the boundary of the former Townships of Pendleton and Salford; and thence along such boundary to the point first named.	Dr. S. J. Yeates.
5.	*District*—The whole of the former Township of Pendleton.	Dr. H. Yearnshaw.
6.	*District*—The whole of the former Township of Broughton.	Dr. T. Waycott Chaff.

This service is administered by the Public Assistance Committee, and I am informed by the Public Assistance Officer that no changes of note in its administration have occurred since 1st April, 1930.

Local Government Act, 1929.

In my report for the year 1930, I outlined the administrative arrangements which were made following the transfer to the Corporation, under the Local Government Act, 1929, of the functions of the former Board of Guardians. These arrangements continued to operate during 1932, and no alterations or developments of note occurred during that year.

Further consultations with representatives of Voluntary Hospitals under Section 13 of the Local Government Act, 1929, did not take place during 1932, as no additional provision for hospital accommodation was made during the year.

Vaccination.

As indicated in the section of this Report dealing with the Local Government Act, 1929, Vaccination was transferred to the Corporation as a public health function on 1st April, 1930.

The vaccinations carried out in Salford are approximately 75 per cent of the whole—a much higher proportion than that obtaining generally in the country. In the opinion of the writer, the main reason for this high rate is that (in addition, of course, to the persistent efforts of the Vaccination Officers) vaccination is still accepted by most people in Salford as a necessary and proper step to take in order to protect their children against smallpox. The comparative freedom of Salford from outbreaks of smallpox may legitimately be attributed to its high rate of vaccination.

During 1932 less difficulty was experienced in tracing children who have removed to new addresses. To a certain extent this is due to the co-operation between the Vaccination Officers and the Health Visitors of the Maternity and Child Welfare Department, whereby the latter notify cases of unvaccinated children who come under their notice while engaged in district work.

No primary vaccinations or re-vaccinations were performed by the Medical Officer of Health under the Public Health (Smallpox Prevention) Regulations, 1917, during 1932.

The Public Vaccinators for Salford and their districts are as follows :—

Description.	District.	Public Vaccinator.
Salford (No. 1) District.	Such part of the Township of Salford as is comprised within the following boundary, namely : Commencing at the former Township boundary between Pendleton and Salford at Broad Street ; along Windsor and the Crescent to Oldfield Road ; along Oldfield Road to Regent Road ; along Regent Road to Regent Bridge ; thence in a northerly and westerly direction along the River Irwell to the boundary between the former Townships of Salford and Pendleton near Peel Park ; thence along the boundary between such former Townships to the point first named.	Dr. V. Newton, 227, Oldfield Road, Salford.5.

Description.	District.	Public Vaccinator.
Salford (No. 2).......	Such part of the Township of Salford as is comprised within the following boundary, namely: Commencing at the boundary of the former Townships of Salford and Pendleton at New Windsor, Salford; along New Windsor and the Crescent to Oldfield Road; along Oldfield Road to Regent Road; along Regent Road to the River Irwell at Regent Bridge; thence in a southerly and westerly direction along the River Irwell and the Manchester Ship Canal to the boundary between the former Townships of Pendleton and Salford; thence along the boundary between such former Townships to the point first named.	Dr. S. J. Yeates, 1, Haworth Street, Cross Lane, Salford, 5.
Pendleton District (Salford Township).	The whole of the former Township of Pendleton.	Dr. Herbert Yearnshaw, 305, Eccles New Road, Pendleton, Salford, 5.
Broughton District (Salford Township).	The whole of the former Township of Broughton.	Dr. Thomas Waycott Chaff, "Limefield," 194, Broughton Lane, Broughton, Salford, 7.

The Vaccination Officers are as follows:—

District.	Vaccination Officer.
North and South Salford Registration Sub-Districts.	Mr. A. Sharrocks, 143, Regent Road, Salford, 5.
West Salford Registration Sub-District	Mr. C. F. Settle, 14, Broom Crescent, Pendleton, Salford, 6.

Particulars as to vaccinations carried out in Salford during the year 1932 are as follows:—

PARTICULARS AS TO VACCINATION DURING 1932.

District.	No. of cases in birth lists.	No. of certificates of vaccination received.	No. of certificates of postponement owing to			No. of statutory declarations under Section 1 of the Vaccination Act, 1907.	No. of certificates of insusceptibility or of having had smallpox.	No. of cases		No. of entries in list sent to public vaccinator.
			Health of child.	Condition of house.	Prevalence of infectious disease.			Parents removed out of district.	Otherwise not found.	
North....	803	878	72	—	1	161	8	20	6	301
South ...	924	959	186	—	—	140	4	29	11	341
West.....	1,543	1,013	17	—	—	248	1	14	2	51
Total....	3,270	2,850	275	—	1	549	13	63	19	693

SECTION IIa.

Atmospheric Pollution.

The subject of atmospheric pollution having such an important bearing on the health of the community, continues to receive considerable attention in the Health Department. The excessive local respiratory death rate is undoubtedly due in part to the smoke-fouled atmosphere which the inhabitants are compelled to breathe. A statistical investigation published in the last Annual Report demonstrated the close relationship existing between smoke pollution and bronchitis mortality. On the other hand, the connection between atmospheric pollution and lung cancer was not so evident, although it was very interesting to note that the heaviest lung cancer mortality in England and Wales was found in the three Yorkshire towns—Huddersfield, Leeds and Sheffield, with rates of 67·66, 45·21, and 43·27 per million respectively. From the analogy of soot as the causative agent in sweep's cancer of bygone days, the possibility of smoke-laden air as an etiological factor of lung cancer cannot be overlooked.

In the industrial north, at any rate, smoke and grime have come to be accepted by the mass of people as the normal environment, and it is difficult to get the inhabitants to realise that our grimy, corrosive atmosphere is a foul blot on modern civilisation.

Undoubtedly the greatest of all health campaigns at the present time is that directed towards purification of the air we breathe.

It is satisfactory to note that anti-smoke propaganda is at last showing results in some quarters in a lessened atmospheric deposit. The substitution of solid carbonised fuel (coke), electricity, and gaseous fuel for raw coal is steadily going on, even though the rate of progress appears slow.

Analysis of Salford's atmospheric deposit has shown of late an appreciable diminution of tar, soot, and other solid matter.

The following table is interesting as showing the recent improvement in these figures when compared with the average for the previous five years. At the same time are included, for comparison, figures for the same periods relating to—

(*a*) a comparatively clean area (Southport—Hesketh Park), and
(*b*) a smoke polluted area (Newcastle-on-Tyne—Westgate Road).

TABLE A.

MEAN MONTHLY DEPOSIT OF ATMOSPHERIC IMPURITY FOR THE PERIOD APRIL, 1931, TO MARCH, 1932.

The figures represent metric tons per 100 square kilometres.

		Peel Park.		Ladywell Sanatorium.		Marple Sanatorium.		Southport Hesketh Park.		Newcastle-upon-Tyne.	
		Five years' average	1931–32	Five years' average	1931–32	Five years' average	1931–32	Five years' average	1931–32	Five years' average	1931–32
Insoluble matter.	Tar	63	15	48	15	23	13	5	4	28	20
	Other Carbonaceous matter	306	127	254	151	188	78	73	60	303	218
	Ash	533	281	401	223	121	80	90	76	398	300
Soluble matter	Loss on ignition	178	108	136	107	121	65	104	94	261	90
	Ash	304	276	221	136	118	115	166	82	377	209
Total Solids		1,380	806	1,059	632	572	351	437	315	1,367	836
Included insoluble matter	Sulphates	191	167	129	102	98	80	58	32	210	91
	Chlorine	128	130	115	87	75	74	73	43	49	41
	Ammonia	6	2	6	7	5	3	2	2	9	7

Perhaps a clearer idea of the recent improvement may be given by converting some of the figures into the English system—English tons per square mile.

Thus, if we consider the amount of solid matter deposited from the atmosphere in the Peel Park region during one year, then whilst this deposit in 1931–32 amounted to 246 tons per square mile, the average for the previous five years was 414 tons per square mile.

It is evident that there has recently been a considerable reduction in the amount of deposited impurity as measured at Peel Park, Ladywell, and Marple; and that the reduction applies to such important constituents as tar and soot. The substantial lowering of the tar figure would point to less raw coal being burned in the domestic grate. Such a result would be the more comforting if the restricted use of raw coal could be considered a manifestation of public health conscience, rather than the effect of industrial depression and shortage of the wherewithal to purchase unlimited fuel. Although it is to be feared that a return to prosperity will see some increase in atmospheric impurity, it is felt that some of the recent improvement is of a permanent nature, and arises from the provision in new houses of small fire grates instead of old-fashioned kitchen ranges, and the gradual substitution in existing houses of electricity, gas, and coke for coal heating.

However, it should never be forgotten that progress must necessarily be slow so long as raw coal is available as a domestic fuel; and the solution of the problem of atmospheric pollution lies in carbonisation of coal prior to distribution. Happily this greatly desired reform is appreciably nearer now that Government assistance is possible.

Investigations Carried Out in the Health Department.

In addition to the examination of soot gauge deposit from the various local observation stations, special investigations are being continued in this Department with respect to the following:—

(1) The measurement of sunlight at four stations, namely, Regent Road, Drinkwater Park Hospital, Ladywell Sanatorium, and Nab Top Sanatorium, Marple.

(2) The measurement of Ultra-violet Light at Regent Road station.

(3) The measurement of sulphur gases in the atmosphere at Regent Road.

These investigations have been carried out by Mr. Monk, the City Analyst, and the results are fully set out in the Analyst's section of this Report, pages 163 to 202, to which the reader is referred.

Light Measurement.—With respect to (1) the measurement of Sunlight by the Potassium Iodide method, and (2) the measurement of

Ultra-violet Light by the photographic method of Dr. Ashworth, an interesting comparison of the results obtained by the two methods has been made. From this it would appear that whilst the amount of SUNLIGHT received in November and December is but ONE-SEVENTH of that received in June, the amount of ULTRA-VIOLET LIGHT received in November and December is only ONE TWENTY-FIFTH of that received in June. In other words the loss of ultra-violet light from the sun in winter is three times as great as the loss of sunlight. As this loss is a matter of great importance from the public health standpoint, it is proposed to supplement these observations in the future by the employment of additional methods of ultra-violet light measurement.

SULPHUR GASES.—Salford is one of the eight co-operating Authorities making observations on the amount of sulphur gases in air. The following comparison of returns (Table B) for the winter months October to March, is interesting. Apparently the air of Salford is three times as sulphurous as the Cardiff air.

Table B.

MEASUREMENT OF SULPHUR DIOXIDE IN THE AIR DURING THE WINTER MONTHS OF 1931–32.

Station.	Number of winter months during which determinations. were made.	Number of determinations.	Average sulphur dioxide (parts per million).
LONDON.			
(1) Government Laboratories Holborn	5	96	0·226
(2) Westminster Bridge	6	159	0·1455
(3) Watson House, S. Lambeth	6	143	0·1317
SHEFFIELD.			
Surrey Street................	6	167	0·1987
NEWCASTLE-ON-TYNE.			
Dean Street	5	20	0·1810
SALFORD.			
Regent Road	6	141	0·1513
BARNSLEY.			
Wood Bros., Glass Works	5	79	0·1456
BIRMINGHAM.			
44, Broad Street	6	130	0·1009
HUDDERSFIELD.			
Ravensknowle	3	29	0·652
CARDIFF	5	14	0·487

pH Value and Acidity of Atmosphere.

Acidity of the atmosphere is most marked and most constant in northern industrial areas. Lancashire industrial areas in particular show a low pH value and high acidity, compared with most other areas. For instance, whilst London deposits show acidity only in the winter months as a rule, an acid atmosphere is found in such places as Liverpool, Salford, and even Southport throughout the year. Possibly this excessive acidity is due in part to the high sulphur content of Lancashire coal, excessive sulphurous acid being given off on combustion.

Of the co-operating authorities who are investigating this matter, Salford's acidity returns are consistently high, and Salford's figures may be taken as fairly representative of the great industrial area of which it is a part.

Expressed in tons of sulphuric acid deposited per square mile per annum, analysis of the local rainwater gives the following results :—

Year April, 1931, to March, 1932.

Peel Park	45·0	tons	per square	mile	per annum.
Ladywell Sanatorium	67·5	,,	,,	,,	,,
Drinkwater Park Hospital	74·8	,,	,,	,,	,,
Nab Top Sanatorium, Marple	37·2	,,	,,	,,	,,

No doubt excessive acidity plays a part in swelling the incidence of catarrhal conditions and in increasing respiratory mortality.

It is obvious that carbonisation of raw coal alone, whilst eliminating smoke, might still leave us with an atmosphere sufficiently acid to be deleterious to human beings as well as material. Hence, it is important that in carbonisation processes, earnest attention should be given to the question of dealing with the sulphur content of coal, in order that the burning of smokeless fuel will not cause the emission of sulphurous acid in considerable amount.

SECTION III.

Infectious Diseases.

The number of notifications of cases of infectious disease received during 1932 was 2,470, as compared with 2,461 received during 1931.

Diphtheria was much more prevalent than during the previous year, 727 cases having been notified, compared with 582 in 1931. This figure (727) was only 9 less than the record number of 736 notified in 1930. The increased prevalence of this disease was distributed fairly evenly over the whole city, the most notable exception being Mandley Park Ward, among the residents of which 55 fewer notifications were received, the actual figures being 81 in 1931 and 26 in 1932. No explanation is offered for this variation from the general increase, e.g., it cannot be said to bo due to the presence in that area of an exceptionally large number of immunised children (immunisation against diphtheria has not yet developed in Salford to such an extent as to produce any marked effect upon the incidence of the disease), nor has there been any improvement of note in the housing conditions of the Ward.

A report upon the progress of Immunisation against Diphtheria in Salford appears on page 107.

On the other hand, a decrease of 55 in the notified cases of Scarlet Fever occurred, the total notifications received being the exceptionally low number of 423.

Among the remaining notifiable diseases, the principal variations in the numbers of notifications as between the years 1931 and 1932 are as follows :—

	1931.	1932.	Increase.	Decrease.
Pulmonary Tuberculosis	446	472	26	—
Acute primary pneumonia	486	466	—	20
Influenzal pneumonia	120	43	—	77

The reduction in the notifications of influenzal pneumonia from 120 to 43 is noteworthy.

The notifications of acute primary pneumonia fell from 486 in 1931 to 466 in 1932.

No cases of malaria and only two cases of Dysentery were notified during 1932.

Details of the number of cases of infectious disease notified are given in Tables 1 and 2 (pages 61 to 63).

The usual methods, described in previous Reports, for the prevention of the spread of infectious diseases were continued. School teachers, in addition, are encouraged to report cases of non-notifiable disease, which are at once investigated by the School Medical Officers. Diphtheria Antitoxin is supplied immediately, free of charge, to any Medical Practitioner who asks for it. A similar arrangement in respect of Scarlet Fever Antitoxin was instituted in May, 1932. These arrangements are used freely by Salford Medical Practitioners.

Cases of infectious disease which cannot be isolated at home are removed to the Corporation's Infectious Diseases Hospital, the Ladywell Sanatorium (for detailed report upon this Institution see pages 82 to 106). The disinfection of premises in which cases of infectious disease have occurred is carried out by a special staff of disinfectors. Bedding and clothing which have been exposed to infection are disinfected at the Corporation's Disinfecting Station at Mode Wheel; details of the work carried out at this Station appear on page 32.

Notifiable Diseases.	Cases notified in Whole District.								Total Cases notified in each Ward.																Cases removed to Hospital.
	At All Ages.	At Ages—Years. Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.	65 and upwards.	Albert Park.	Charlestown.	Claremont.	Crescent.	Docks.	Kersal.	Langworthy.	Mandley Park	Ordsall Park.	Regent.	St. Matthias'	St. Paul's.	St. Thomas'.	Seedley.	Trinity.	Weaste.	
Smallpox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diphtheria (including Membranous croup)	727	5	163	450	72	32	5	..	21	59	17	66	47	25	42	26	60	59	25	81	90	29	26	54	718
Erysipelas	99	2	..	5	6	28	39	19	5	8	9	7	3	4	9	3	3	4	7	8	9	2	12	6	55
Scarlet fever	423	5	124	241	38	14	1	..	53	46	13	24	7	30	19	44	46	32	23	30	20	10	14	12	392
Typhus fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Enteric fever	16	..	..	7	6	2	1	..	..	..	..	..	1	1	..	..	3	1	4	1	..	1	..	4	16
Continued fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Relapsing fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal fever	23	..	..	..	9	14	..	..	..	3	..	1	1	2	..	2	1	1	2	1	4	2	1	2	10
Puerperal Pyrexia	23	..	..	..	8	15	..	..	3	4	1	4	..	1	..	..	..	..	..	2	..	1	3	4	9
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cerebro-Spinal Meningitis	7	1	2	4	..	..	..	..	..	..	..	..	..	1	..	..	2	..	2	1	..	..	..	1	1
Acute-Poliomyelitis	4	1	3	..	..	..	..	..	1	1	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Glanders	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ophthalmia Neonatorum	16	16	..	..	..	..	..	..	2	2	..	1	1	..	..	2	3	1	2	2	..	..	..	..	..
Pulmonary tuberc'lsis	472	..	2	23	140	174	119	14	34	20	13	46	24	13	19	22	44	43	37	40	25	19	42	31	442
Other forms of tuberculosis	124	3	25	48	19	18	8	3	9	4	3	8	5	4	5	9	11	12	12	9	8	8	10	7	27
Malaria	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dysentery	2	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	1
Acute Primary Pneumonia	466	28	133	76	64	72	71	22	25	37	10	61	12	7	16	20	26	36	49	36	49	17	42	23	7
Influenzal Pneumonia	43	..	1	4	10	16	10	2	1	2	..	3	1	1	1	2	1	3	3	9	4	1	4	7	1
Encephalitis Leth.	3	..	..	..	..	1	2	..	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..
Acute Polio Encephalitis	1	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Pemphigus Neonatorum	21	21	..	..	..	..	..	..	1	1	..	1	1	1	2	2	..	2	1	..	4	..	2	3	..
Total	**2470**	**82**	**454**	**859**	**372**	**387**	**256**	**60**	**155**	**188**	**66**	**224**	**103**	**91**	**113**	**132**	**200**	**195**	**168**	**220**	**213**	**91**	**157**	**154**	**1679**

TABLE I. 2.

Showing the Number of Cases of Infectious Disease Notified to the Health Department during the Years 1883 to 1932.

Year.	Smallpox.	Scarlet Fever.	Diphtheria.	Fever.					Erysipelas.	Cholera.	Plague.	Anthrax.	Glanders.	Cerebro-Spinal Meningitis.	Acute Poliomyelitis.	Ophthalmia Neonatorum.	Measles.	Tuberculosis.		Total.
				Enteric.	Typhus.	Con-tinued.	Relapsing.	Puerperal.										Pul-monary.	Non-Pul-monary.	
1883	6	805	81	293	14	..	..	21	..	..	..	..	..	..	..	..	..	..	..	1220
1884	5	1154	99	422	35	..	..	14	..	..	..	..	..	..	..	..	..	..	..	1729
1885	11	632	54	205	32	..	..	15	..	..	..	..	..	..	..	..	..	..	..	949
1886	..	1536	41	288	5	..	..	12	..	..	..	..	..	..	..	..	..	..	..	1882
1887	4	1427	83	368	7	..	..	11	..	..	..	..	..	..	..	..	..	..	..	1900
Average 5 years	**5**	**1111**	**72**	**315**	**19**	..	..	**15**	..	..	..	..	..	..	..	..	..	..	..	**1537**
1888	52	1128	175	572	31	..	..	26	..	..	..	..	..	..	..	..	..	..	..	1984
1889	..	1283	691	485	3	..	..	14	..	..	..	..	..	..	..	..	..	..	..	2476
1890	..	985	704	383	6	4	..	22	76	..	..	..	..	..	..	..	..	..	..	2180
1891	..	483	231	377	1	6	..	13	53	..	..	..	..	..	..	..	..	..	..	1164
1892	7	865	231	347	5	5	..	26	86	..	..	..	..	..	..	..	..	..	..	1572
Average 5 years	**12**	**948**	**406**	**433**	**9**	**3**	..	**20**	**43**	..	..	..	..	..	..	..	..	..	..	**1874**
1893	168	865	261	563	5	12	..	30	147	..	.	..	..	..	..	..	..	..	..	2051
1894	35	1043	242	316	1	14	..	21	130	..	..	..	..	..	..	..	..	..	..	1802
1895	4	1167	194	382	..	11	..	19	111	..	..	..	..	..	..	..	..	..	..	1888
1896	2	1579	158	291	7	12	..	24	114	..	..	..	..	..	..	..	..	..	..	2187
1897	..	714	103	291	..	14	..	13	121	..	..	..	..	..	..	..	..	..	..	1256
Average 5 years	**42**	**1074**	**192**	**369**	**3**	**13**	..	**21**	**125**	..	..	..	..	..	..	..	..	..	..	**1836**
1898	..	659	97	367	16	14	..	31	146	..	..	..	..	..	..	..	..	..	..	1330
1899	..	723	184	273	3	20	..	26	153	..	..	..	..	..	..	..	..	..	..	1382
1900	6	1317	309	335	2	8	..	21	179	..	..	..	..	..	..	..	..	..	..	2177
1901	..	1320	420	317	1	8	..	33	230	..	..	..	..	..	..	..	..	..	..	2329
1902	23	780	292	207	43	6	..	16	164	.	..	..	..	..	..	..	..	..	..	1531
Average 5 years	**6**	**960**	**260**	**300**	**13**	**11**	..	**25**	**174**	.	..	..	..	..	..	..	..	..	..	**1750**
1903	175	737	335	178	..	1	..	13	161	..	..	..	..	..	..	..	..	..	..	1600
1904	57	1043	422	202	10	7	..	21	168	..	..	..	..	..	..	..	..	..	..	1930
1905	3	960	363	142	..	7	..	26	176	..	..	..	..	..	..	..	..	..	..	1677
1906	..	904	432	225	..	1	..	21	142	..	..	..	..	..	..	..	..	..	..	1725
1907	8	1044	384	92	..	5	..	23	136	..	..	..	..	..	..	..	..	356	..	2048
Average 5 years	**49**	**938**	**387**	**168**	**2**	**4**	..	**21**	**157**	..	..	..	..	..	..	..	..	..	..	**1796**

Year.	†Chicken-pox	Smallpox.	Scarlet Fever	Diphtheria.	Fever.				Puerperal Pyrexi	Pemphigus Neonatorum	Erysipelas.	Anthrax.	Cerebro-Spina Meningitis.	Acute Poliomyelitis	Ophthalmia Neonatorum	* Measles.	culosis.		Trench Feve	Malaria.	Acute Polio Encephaliti	Dysentery.	Acute Prima Pneumonia	Influenzal-Pneumonia	Encephalitis Lethargica.	Total.
					Enteric.	Typhus.	Con-tinued.	Puerperal.									Pul-monary.	Non-Pul-monary								
1908..........	..	..	1341	629	181	..	7	27	..	..	127	..	..	..	..	..	563	..	..	..	..	..	..	..	..	2875
1909..........	..	..	1577	562	138	..	2	26	..	..	182	..	..	..	..	..	581	..	..	..	..	..	..	..	..	3068
1910..........	..	..	909	333	113	..	..	24	..	..	129	..	..	..	..	..	651	..	..	..	..	..	..	..	..	2159
1911..........	..	..	911	375	108	..	1	24	..	..	217	..	..	..	..	..	714	..	..	..	..	..	..	..	..	2350
1912..........	..	..	541	242	76	..	7	26	..	..	181	..	1	29	..	..	1073	..	..	..	..	..	..	..	..	2206
Average 5 years	..	..	**1056**	**428**	**123**	..	**3**	**25**	..	..	**167**	..	..	..	..	..	**716**	..	..	..	..	..	..	..	..	**2532**
1913..........	..	4	1224	336	113	..	1	17	..	..	203	3	4	2	..	..	1206	503	..	..	..	..	..	..	..	3616
1914..........	..	1	2336	352	63	..	..	20	..	..	248	1	3	5	80	..	1126	236	..	..	..	..	..	..	..	4471
1915..........	..	1	997	236	84	..	..	23	..	..	172	..	9	7	97	..	816	195	..	..	..	..	..	..	..	2637
1916..........	..	8	442	204	47	..	..	13	..	..	124	..	9	1	60	2065	745	241	..	..	..	..	..	..	..	3959
1917..........	..	..	200	183	40	..	..	2	..	..	91	..	2	2	43	3100	575	213	..	..	..	..	..	..	..	4401
Average 5 years	..	**3**	**1040**	**252**	**69**	..	**1**	**15**	..	..	**167**	**1**	**5**	**3**	**70**	**2582**	**893**	**278**	.	..	..	..	..	..	..	**3817**
1918..........	..	..	289	148	42	..	..	17	..	..	92	..	2	2	53	766	556	143	..	..	..	..	..	..	..	2110
1919..........	..	4	663	211	20	..	..	32	..	..	131	..	6	3	85	2689	583	107	2	117	..	56	..	365	4	5078
1920..........	..	1	1124	334	49	..	1	40	..	..	135	..	10	1	116	..	574	120	..	42	..	8	..	230	6	2791
1921..........	..	..	1746	313	41	..	2	19	..	..	146	..	9	..	81	..	553	102	..	11	..	1	..	394	7	3425
1922..........	..	..	1275	359	37	..	..	25	..	..	141	..	4	..	72	..	510	101	..	6	..	..	..	426	1	2957
Average 5 years	..	**1**	**1019**	**273**	**37**	..	**1**	**26**	..	..	**129**	..	**6**	**1**	**81**	**1727**	**555**	**115**	**1**	**35**	..	**13**	..	**283**	**4**	**3272**
1923..........	..	..	868	304	27	..	..	22	..	..	98	1	5	1	57	..	547	125	..	4	..	1	114	86	8	2268
1924..........	..	..	403	286	26	..	..	18	..	..	89	..	4	1	56	..	557	87	..	1	2	1	461	138	59	2189
1925..........	1145	..	510	376	30	..	..	17	..	..	134	.	2	1	60	..	507	132	..	1	1	..	409	132	27	3484
1926..........	..	..	720	533	10	..	..	20	12	24	140	..	3	4	50	..	532	123	..	1	4	..	363	99	13	2651
1927..........	..	1	631	507	9	..	..	7	27	16	120	..	5	4	48	..	573	148	..	2	..	2	465	158	17	2740
Average 5 years (excluding Chicken pox).	..	**1**	**626**	**401**	**20**	..	..	**17**	20	**20**	**116**	**1**	**4**	**2**	**54**	..	**543**	**123**	..	**2**	**1**	**1**	**362**	**123**	**25**	**2437**
1928..........		5	822	425	20	..	1	19	28	11	139	..	13	..	55	..	454	166	..	1	..	..	458	80	12	2709
1929..........		..	635	678	9	..	..	16	18	10	150	..	5	2	35	..	522	112	..	..	..	..	658	168	9	3027
1930..........	..	7	679	736	25	..	1	13	30	6	158	..	2	..	33	..	454	130	..	..	..	..	422	49	8	2753
1931..........	..	..	478	582	7	..	..	18	25	27	113	..	4	..	13	..	446	139	..	..	..	..	486	120	3	2461
1932..........	..	..	423	727	16	..	..	23	23	21	99	..	7	4	16	..	472	124	..	..	1	2	466	43	3	2470
Average 5 years	..	2	**607**	**630**	**15**	..	**1**	**18**	25	**15**	**132**	..	**6**	**1**	**30**	..	**470**	**134**	..	**1**	**1**	1	**498**	**92**	**7**	2684

*Measles notifiable in Salford 1916 to 1919. †Chicken-pox notifiable in Salford, January 22nd to December 31st, 1925.

TUBERCULOSIS DEPARTMENT.

Annual Report for 1932.

The Tuberculosis Dispensary is situated at Nos. 145 and 147, Regent Road, Salford, and consists of two consulting rooms with waiting and dressing rooms attached, X-ray and dark rooms and a room set apart and fitted up in October, 1932, for the performance of Artificial Pneumothorax Refills, Gas Replacements, etc., which was necessary owing to the increasing number of patients undergoing collapse therapy. There are no branch dispensaries or visiting stations. The Staff consists of two Medical Officers, four Health Visitors and three Clerks.

(a) Patients Referred for Examination.

Nine hundred and twenty-five (925) patients (including non-pulmonary cases) were referred to the Tuberculosis Officers for examination by General Practitioners, School Medical Officers and local Hospitals during 1932. It is to be regretted that, in many cases, primary notifications of tuberculosis are received when the disease is in such an advanced state that no treatment can be of lasting value, but, during the year, the improvement which had taken place during 1930 and 1931 has continued, and more early and suspected cases have been sent in by the General Practitioners. It is only by the co-operation of the General Practitioners that the Tuberculosis Officers can deal with cases in their earliest and, therefore, most curable stage.

The relations between the General Practitioners of the City and the Dispensary Medical Staff are most cordial and every encouragement is given to send all suspected cases to the Dispensary for examination. A full report of the condition found after physical and X-ray examination is sent to the Doctor concerned, and it has been possible to give invaluable assistance in diagnosing not only lesions of the chest and other organs caused by tuberculosis, but many other lesions due to some other cause. This is of great value to Practitioners in the treatment of such cases.

Well equipped Dispensaries, staffed by well qualified men, are now being recognised as centres for the diagnosis of all chest diseases, and this is justified by the experience obtained by the Medical Staffs in the physical and X-ray signs of a varied list of pulmonary conditions. A large majority of the patients referred for examination are seen before notification.

The fact that many cases of pulmonary tuberculosis reach a comparatively advanced stage before notification is very often due to the late period at which the patient seeks the advice of the General Practitioner. It is worthy of note that in a number of Medical Practitioner's reports accompanying such advanced cases to the Dispensary occur the words "I have only seen this patient for the first time a few days ago."

It is a remarkable fact that pulmonary tuberculosis can reach wide-spread distribution in the lungs without producing symptoms sufficiently striking to cause the person affected to seek advice and it is often difficult to make patients and their friends believe that serious disease is present in the chest.

Improvement in this respect can only be brought about by propaganda work and all opportunities are taken by Tuberculosis Officers to give lectures and talks to various local associations and by window displays at the Health Office to bring before the Public a knowledge of the early signs of tuberculosis.

At the same time it cannot be too strongly emphasised that inadequate medical examination when the patient consults his Doctor is bound to result in failure to recognise tuberculosis at an early or curable stage. It is pleasing to know that the percentage of cases of pulmonary tuberculosis not notified before death is gradually decreasing from year to year (16·73 in 1930, 13·8 in 1931, and 10·1 in 1932), but it is a regrettable fact that the percentage of fatal cases notified within three months of death during the past year shows a slight increase on the previous year's figures.

There is reason to believe that some patients in a superior social position do not wish the fact that they are suffering from tuberculosis to be known to the public authorities. From time to time efforts are made to bring to the notice of the Medical Practitioners of the City that it is their statutory duty under the Public Health Regulations to notify all cases of tuberculosis as soon as they come to their notice.

A point of first importance, and one that is frequently neglected, is the sending of samples of the patient's sputum for examination for the presence of tubercle bacilli in all cases of persistent cough which do not yield early to ordinary treatment.

It is satisfactory to know that definite improvement in the sending of sputa is taking place. Seven hundred and fifty-eight (758) samples of sputum were examined for General Practitioners in 1932, as against six hundred and seventy-four (674) in 1931.

All sputum examinations desired by Medical Practitioners are made free of charge at the Municipal Pathological Laboratory and special sterile metal containers are provided for the collection of specimens.

(b) Routine Procedure.

When a patient is notified to this Department by a Medical Practitioner as suffering from tuberculosis in any form whatever, the home of such patient is immediately visited by one of the Health Visitors. Precautions as to the likelihood of the spread of infection, the desirability of separate sleeping accommodation, etc., are advised, and efforts are made to secure the attendance at the Dispensary of all contacts residing in the same house. Four hundred and sixteen such contacts were examined last year. Nine of these were found to be suffering from pulmonary tuberculosis.

It happens not infrequently that a diagnosis cannot be made on first examination of a patient at the Dispensary, and in all such cases the patients are re-invited to attend the Dispensary periodically until a definite diagnosis is made.

In some cases of advanced disease where removal to an Institution for treatment is impracticable, and adequate nursing is impossible under the patient's home conditions, arrangements are made with the District Nursing Association, and the patients are visited daily (in some cases twice daily) in their homes by a trained nurse. In the case of patients in poor circumstances and recommended by the Tuberculosis Officers as being suitable for the granting of extra nourishment, arrangements are made with milk dealers in the City for milk and eggs to be supplied each day.

The usual types of cases receiving extra nourishment are: (*a*) patients who have received an adequate course of sanatorium treatment and whose medical condition is such that, with the grant of extra nourishment, they may be expected to maintain or recover full working capacity; and (*b*) patients in whose cases ultimate arrest of the disease may reasonably be anticipated, and who are waiting for admission to a sanatorium.

Owing to the continued economic depression during the past year, more cases have had to be assisted with extra nourishment than usual. It is found that when patients are discharged from the Sanatorium where they have been receiving adequate nourishment to homes where the food supply is quite inadequate, they soon begin to lose weight, their resistance is lowered, and the disease is very liable to become active again.

(c) X-ray Examination.

The efficiency of a Tuberculosis Dispensary is greatly enhanced by its equipment with a modern X-ray installation. A powerful set (100 M.A. single valve unit) is installed at the Dispensary, with all necessary accessories, and X-ray examinations are made in large numbers.

Every new case sent for investigation is carefully screened after physical examination, and in most cases a skiagram of the chest or other part is taken.

This method of examination is an invaluable aid, not only for purposes of diagnosis, but in obtaining information as to the real extent of the disease in the lungs, bones or joints of the patient. It is also of great value in determining the results of treatment. One thousand nine hundred and eighty-three X-ray examinations were made last year. These examinations have been found of great value to General Practitioners in the differentiation of other chronic diseases of the lung simulating tuberculosis, many of which in the past have been diagnosed as cases of pulmonary tuberculosis. It should also be noted that considerable time is now saved in making a definite diagnosis of chest diseases, and patients are not required to be kept under observation for periods of longer than one or two months before a final decision can be made.

Much public money and loss of the patients' time is saved also by obviating the sending of suspected cases to the Sanatorium for periods of observation where the physical signs in the lungs simulate those of pulmonary tuberculosis. By means of the X-rays the differential diagnosis of such cases is made enormously easier.

The great value to the Medical Officers of X-ray examination of the chest has been markedly shown by the large number of cases gradually removed from the Dispensary Register which had many years ago been diagnosed as cases of pulmonary tuberculosis on physical signs only. This has been possible owing to a more accurate diagnosis by X-ray examination.

In the X-ray Department a reducing camera was installed in 1930, and when a radiogram showing tuberculous disease is taken, a reduced sized photographic copy is sent to the General Practitioner. In order that he may have an accurate knowledge of the condition and extent of the disease, careful notes describing the condition are filled in on the back of the photograph.

Many letters of appreciation have been received from Medical Practitioners regarding this new development, which is undoubtedly of great assistance to the doctor attending the patient.

Advances in the X-ray diagnosis of diseases of the chest are constantly being made, and one of the latest is the making of stereoscopic skiagrams. A commencement in this direction was made at the Dispensary in 1931 with the installation of a Wheatstone Stereoscope for the examination of films taken by this method.

(d) Treatment by Artificial Pneumothorax.

The greatest advance of recent years in the treatment of pulmonary tuberculosis is the more universal use of Artificial Pneumothorax or collapse of the lung.

This method of treatment was begun here four and a half years ago, and sufficient experience has now been obtained to warrant considerable confidence in its efficacy in suitable cases.

Primary inductions are carried out both at Ladywell and Nab Top Sanatoria, and refills are continued there for six months or longer, according to the time the patient is able to remain in the Sanatorium.

Usually after six months in straightforward cases the patient can return home, and the refills are continued at the Dispensary. Many cases have returned to work and have refills at intervals of two to four weeks, according to absorption of air.

No trouble has been experienced during the past year in obtaining the attendance of patients who are working and the opportunity is taken here to express appreciation of the action of employers in allowing their employees to attend for refills when required. As the collapse of the lung must be kept up for a period of from two to four years the number of patients requiring refills is constantly growing, and during the past year a special room has had to be set apart for the Dispensary treatment of those patients undergoing collapse therapy. The room is fitted with all necessary apparatus for refills, gas replacements, etc.

It is a revelation to see the rapid improvement caused in these patients after the lung is collapsed, and it is hoped that a considerable number will be eventually cured. It is noteworthy that some recent French statistics, based on 226 cases, show that over 80 per cent of the patients were cured in three or four years' treatment by this method.

The ideal case for this treatment is one in which the disease is confined to one lung only, but those in which there is a small amount of disease in the contra-lateral lung are also suitable. In the latter type of case it is often found that after collapse of the more diseased side, the lesion on the other side also begins to heal. This is due to the increased resistance of the patient caused by the removal of the toxins from the blood which were previously absorbed from the badly-diseased lung.

Several cases in which the disease in the contra-lateral lung has not improved with collapse of the more diseased side have been treated by injections of Sanocrysin (gold thiosulphate). In this way the advance of the lesion has been prevented and the disease has commenced to fibrose.

During the past year a preparation known as Solganol B. Oleosum has been introduced for treatment of cases by Gold Therapy. The great advantage of this preparation is that instead of being injected into a vein, as required for Sanocrysin treatment, it can be injected into the muscular tissue of the buttock. No pain is caused and the more gradual absorption of the gold is said to be advantageous in lessening the liability to certain complications which sometimes occur with Sanocrysin. There are about a dozen patients in Ladywell Sanatorium undergoing treatment by this preparation, but it is yet too early to say the preparation has any advantage over other previously used gold preparations.

A few cases of more advanced disease unsuitable for collapse therapy have been treated by Sanocrysin, but no definite benefit has been obtained.

Analysis of Cases Given Artificial Pneumothorax Treatment.

During the past year thirty-two (32) new cases commenced treatment by Artificial Pneumothorax (thirteen (13) at Ladywell Sanatorium and nineteen (19) at Nab Top Sanatorium). Forty-one (41) patients continued their refills at the Dispensary, eleven (11) of whom are working full time with completely quiescent disease. The number of Artificial Pneumothorax refills carried out at the Dispensary, Ladywell and Nab Top Sanatoria, during the past year was as follows:—

Tuberculosis Dispensary	424
Ladywell Sanatorium	315
Nab Top Sanatorium	322
Total Number of Refills	1,061

Four patients with tuberculous disease in one lung only who have been undergoing collapse therapy for about three years have apparently recovered and the lung has been allowed to return to its normal position.

(e) Insured Persons.

Insured patients not in need of Institutional treatment are usually placed on domiciliary treatment, that is to say, they are treated by their own doctors whilst residing at home, and records of progress should be furnished every three months by the attending Medical Practitioners on Form G.P. 36. These patients are examined from time to time by one of the Tuberculosis Officers, and a report furnished to the Practitioner concerned.

(f) Dispensary Treatment.

Non-insured patients suffering from chronic disease who are unsuitable for Sanatorium treatment or who have received Institutional treatment and are now ambulant, and who are too poor to pay a General Practitioner, are treated at the Dispensary by Cod Liver Oil Emulsions or suitable drugs.

The condition of these persons depends to a large extent on the home conditions, the facilities for obtaining suitable food and the general habits of the patient. Their disease appears to remain stationary for long periods, especially when they are of middle age or over and when the acute stage of the disease is past.

(g) Primary Tuberculous Pleurisy.

(Note by the Senior Clinical Tuberculosis Officer).

It is opportune in this report to comment on the above condition for two reasons:—

1. The increased number of patients (13 cases) seen during the past year for the first time who were suffering from lower lobe pleurisy with effusion.
2. The number of patients (19 cases) who, when examined at the Dispensary for the first time, were found to have active tuberculosis disease of one or both lungs and who gave a history of having had pleurisy with effusion from one to three years previously.

I think it is now recognised by experienced Tuberculosis workers that the majority of primary pleurises and certainly those with effusion (except a few which may be due to Syphilis) should be regarded as due to the Tubercle Bacillus and the patient given adequate treatment before returning to work.

Samples of the effusion from the cases of primary pleurisy passing through our hands have been submitted to the laboratory for guinea pig inoculation and the great majority have been returned positive.

All patients mentioned above who had suffered from primary pleurisy at some previous date returned to work after a few weeks' treatment at home, and all of them had developed active disease in one or both lungs after a varying interval of time. It is evident that the disease had been latent over this period, and owing to the patient's resistance becoming lowered in some way the Tubercle Bacillus had again become active.

In my opinion all patients with primary tuberculous pleurisy should undergo Sanatorium treatment until all X-ray evidence of the disease has disappeared. This will, as far as is possible, prevent the development of active pulmonary tuberculosis at a later date.

(h) Non-pulmonary Tuberculosis.

The total number of primary and informal notifications of non-pulmonary or surgical tuberculosis received during 1932 was one hundred and twenty-four (124), (forty-eight (48) adults and seventy-six (76) children of school age). These are made up of cases suffering from disease of glands, bones, joints, abdomen, meninges and other forms. The large majority of these patients are not seen at the Dispensary as they are usually sent direct by the General Medical Practitioners to the local Hospitals for diagnosis and treatment. A certain number are sent in the first instance to the Dispensary by General Practitioners when the diagnosis is doubtful and in the case of children many are referred by the School Medical Officers.

Cases requiring surgical treatment are sent by the Dispensary Medical Officers to Salford Royal Hospital or to the Municipal Hospital. Where

Sanatorium treatment is likely to be of benefit the patients are sent by the Tuberculosis Officers and at the request of Hospital Medical Officers to Nab Top Sanatorium. When considered suitable, patients are referred for treatment at the Artificial Sunlight Clinic.

EXAMINATION AND TREATMENT OF CHILDREN DURING 1932.

(a) Contacts.

During the year 1932, one hundred and ninety-seven (197) children were examined as contacts at the Tuberculosis Dispensary. Ninety-eight (98) of these were given the Von Pirquet test, which resulted in forty-three (43) being positive and fifty-five (55) negative. This result closely approximates the figures reported by other observers. Those showing a positive reaction have been placed under observation and will be re-examined at intervals over a period of years.

(b) Pulmonary Disease in Children.

1. TUBERCULOUS.

Thirty-four (34) children of school age were referred to the Dispensary in 1932 for examination of the chest by the School Medical Officers, General Practitioners and Medical Officers of local Hospitals.

Sixteen (16) children were diagnosed as suffering from tuberculous disease of the chest. Of the above sixteen cases ten (10) came from homes in which a positive adult case of pulmonary tuberculosis had occurred during the past two or three years.

The adult type of pulmonary tuberculosis is rare in children of school age and only two patients were found to be suffering from this type. Each had definite physical and X-ray evidence of the disease with a positive sputum. Seven patients showed hilar gland infection on X-ray examination, and seven patients with negative sputum were found to be suffering from pulmonary tuberculosis based on physical and X-ray examination.

The above children were admitted for treatment at Nab Top Sanatorium. At the Sanatorium there is an Open-air School in which all children under treatment can continue their education as soon as they are considered fit to attend by the Medical Superintendent.

2. NON-TUBERCULOUS.

Chronic non-tuberculous pulmonary disease in children is very common and is usually a sequela of an attack of pneumonia or generalised bronchitis following measles or whooping cough. It should be recognised that measles in particular is liable to cause marked alteration in the epithelium of the bronchial mucosa and the stroma of the lungs which is followed by fibrotic changes. Broncho or lobar pneumonia in children frequently fails to resolve completely and goes on to produce pulmonary fibrosis.

These children are extremely susceptible to the polluted atmosphere of industrial towns and easily take cold, resulting in recurrent attacks of bronchitis. The pulmonary fibrosis is increased and finally bronchiectasis may supervene. A considerable number of these children are referred to the Tuberculosis Medical Officers for physical and X-ray examination of the chest because the physical signs resemble those of tuberculous lung disease. Many of these children find considerable benefit by attending an Open-air School and we have also found that treatment at the Artificial Sunlight Clinic is useful in increasing their resistance.

INSTITUTIONAL TREATMENT.

(a) Nab Top and Ladywell Sanatoria.

The residential institutions in connection with the Tuberculosis scheme are :—

(*a*) Nab Top Sanatorium, Marple.
(*b*) Ladywell Sanatorium, Salford.

There are 120 beds available at the Nab Top Sanatorium, Marple, for the treatment of Salford patients. These beds are occupied principally by observation, early, and intermediate cases of pulmonary tuberculosis. Occasionally, however, cases of surgical tuberculosis are admitted for treatment. Twelve of the beds which are in rather exposed shelters are not used during the six winter months.

At the Ladywell Sanatorium there are 72 beds set apart for the treatment of tuberculosis. Many cases are being admitted to the Ladywell Sanatorium while the temperature remains above normal ; subsequently, on becoming afebrile, they are transferred to the Nab Top Sanatorium, Marple, for open-air sanatorium treatment. It has been found that many cases of quite moderate severity do badly at an open-air sanatorium such as Nab Top, where they are almost completely in the open air, but when admitted to the Ladywell Sanatorium, in which, while there is an abundance of fresh air, the patient is not actually living and sleeping in the open air, excellent progress is made, and the patient's temperature rapidly falls. Numbers of these patients have been transferred from the Nab Top Sanatorium, where they had been in bed continually for several months with no apparent improvement, and on transfer to the Ladywell Sanatorium immediate improvement with a fall of temperature has been noticed. It is, consequently, of great value to have two Institutions of different type for the treatment of pulmonary tuberculosis.

The Ladywell Sanatorium is also largely used for the isolation of advanced cases ; such isolation is undoubtedly of great value in lessening the danger of massive infection in the homes, but is detracted from by the difficulty of keeping the patients in hospital indefinitely.

Owing to the increasing number of cases requiring treatment by Artificial Pneumothorax a certain number of beds in Ladywell Sanatorium have had to be utilised during the past few years for this type of case. The Medical Superintendent at Nab Top Sanatorium, Marple (where there is no Assistant Medical Officer), has not been able to cope with the whole number of patients requiring collapse therapy. Consequently, thirteen (13) patients have undergone this form of treatment at Ladywell Sanatorium and have progressed equally as well as those at Nab Top Sanatorium.

(b) Treatment of Tuberculous Skin Diseases.

Special arrangements have been made with the Manchester and Salford Hospital for Skin Diseases for the treatment of lupus and other tuberculous skin lesions. A large number of these cases were approved for Artificial Sunlight treatment and there is no doubt that this method has a very beneficial effect on the lesions, recovery being much more rapid than in cases treated by local applications only. It is, however, necessary in order to obtain the maximum benefit that the patients should attend daily for Artificial Sunlight treatment. Unfortunately, some patients who are working are unable to do this and, where possible, we have been able to accommodate these at our own Artificial Sunlight Clinic.

The number of visits paid by patients to the Skin Hospital for Artificial Sunlight treatment during 1932 was two thousand one hundred and ninety-one (2,191), the total number of tuberculous skin cases treated was fifty-six (56), and the total number of attendances at the Skin Hospital two thousand eight hundred and twenty-eight (2,828).

GENERAL REMARKS.

The powers contained in the Salford Corporation Act, 1920, and the Public Health Act, 1925, for the compulsory removal to hospital of persons suffering from pulmonary tuberculosis have not been utilised up to the present time.

It has been found that in obstinate cases of advanced disease it is sufficient to warn the patient that compulsory powers can be put in force on application to a magistrate.

No action has been necessary under the Public Health (Prevention of Tuberculosis) Regulations, 1925, in connection with tuberculous employees in the milk trade.

Three sessions per week have been allotted to the Tuberculosis Department for the treatment of cases of surgical tuberculosis in the Artificial Sunlight Clinic. Great improvement has been noted in cases of tubercular gland disease in which open sinuses have been present. These have derived very great benefit, and the sinuses, which in some cases had been discharging continuously for six months to two years, have definitely closed, and the patient's general health has been very greatly improved. Several cases of tuberculous joint disease have also been submitted to this treatment, but so far do not show any marked signs of improvement. No cases of pulmonary tuberculosis have as yet been given treatment by ultra violet rays.

TABLE 1.

SUMMARY OF WORK DONE AT THE TUBERCULOSIS DISPENSARY IN 1932.

Diagnosis.	Pulmonary.				Non-Pulmonary.				Total.			
	Adults.		Children		Adults.		Children		Adults.		Children	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
A. New cases examined during the year—												
(*a*) Definitely tuberculous	180	136	8	5	8	17	17	14	188	153	25	19
(*b*) Doubtfully tuberculous	—	—	—	—	—	—	—	—	34	34	6	5
(*c*) Non-tuberculous..	—	—	—	—	—	—	—	—	181	156	66	58
B. Contacts examined during the year—												
(*a*) Definitely tuberculous	4	3	1	1	—	—	—	—	4	3	1	1
(*b*) Doubtfully tuberculous	—	—	—	—	—	—	—	—	—	—	10	10
(*c*) Non-tuberculous..	—	—	—	—	—	—	—	—	89	143	70	85
C. Cases written off Dispensary Register as—												
(*a*) Cured	28	28	2	2	3	7	3	4	31	35	5	6
(*b*) Diagnosis not confirmed or non-tuberculous	—	—	—	—	—	—	—	—	298	326	152	155
D. Number of persons on Dispensary Register on December 31st—												
(*a*) Diagnosis completed	614	455	40	41	61	69	80	82	675	524	120	123
(*b*) Diagnosis not completed	—	—	—	—	—	—	—	—	34	34	16	15

1. No. of persons on Dispensary Register on January 1st..	1477
2. No. of patients transferred from other areas and "lost sight of" cases returned .	21
3. No. of patients transferred to other areas and cases "lost sight of"	94
4. Died during the year (Dispensary cases)	196
5. No. of attendances at Dispensary (including contacts)	5143
6. No. of consultations with medical practitioners—	
(*a*) Personal	9
(*b*) Other	796
7. No. of visits by Tuberculosis Officers to homes	87
8. No. of visits by Nurses or Health Visitors to homes for Dispensary purposes..	5507
9. No. of—	
(*a*) Specimens of sputum, &c., examined	758
(*b*) X-ray examinations made in connection with Dispensary work.......	1983
10. No. of "TB plus" cases on Dispensary Register on December 31st	551
11. No. of insured persons under Domiciliary treatment on December 31st	708
12. No. of "Recovered cases" restored to Dispensary Register	2

TABLE 2.

Showing Period elapsing between Notification and Death in Fatal Cases of Pulmonary Tuberculosis.

	Number.	Percentage.
Not notified before death	24	10·10
Notified within three months of death	51	22·91
,, from three months to one year before death	52	23·24
.. from one year to two years before death	37	16·58
Over two years	61	27·20

Total number of deaths, 225.

Ratio of non-notified cases to total fatal cases, 24—225.

TABLE 3.

New Cases and Mortality during 1932.

Age Periods.	New Cases.				Deaths.			
	Pulmonary.		Non-Pulmonary.		Pulmonary.		Non-Pulmonary.	
	M.	F.	M.	F.	M.	F.	M.	F.
0	..	..	2	1	..	..	2	1
1	..	2	12	13	..	3	4	5
5	5	2	9	12	1	..	..	1
10	8	8	15	12	..	1	4	1
15	30	25	4	5	10	11	2	1
20	32	53	6	4	20	22	2	..
25	41	58	3	9	25	21	1	1
35	46	29	4	2	17	16	3	1
45	58	16	2	3	33	7	1	..
55	32	13	..	3	21	6	2	1
65 and upwards	11	3	..	3	9	2	..	2
Totals	263	209	57	67	136	89	21	14

TABLE 4.

Occupations of the 472 Cases of Pulmonary Tuberculosis Notified.

MALES.

1.	Joiners, House Decorators and Building Trades	16
2.	Carters and Hawkers	4
3.	Labourers and Navvies	65
4.	Railway Workers	3
5.	Clerks and Typists	17
6.	Makers of Wearing Apparel	16
7.	Colliers	2
8.	Mechanics and Engineering Workers	27
9.	Grocers	3
10.	Bakers	2
11.	Printers and Bookbinding Trades	4
12.	Shop Assistants	1
13.	Cotton Workers	6
14.	Electricians	2
15.	Post Office Workers	2
16.	Dyers and Bleachers	3
17.	Employees in Motor Trades	5
18.	Porters	2
19.	Hairdressers	2
20.	Warehousemen	3
21.	Packers	3
22.	Waiters	1
23.	Scholars	13
24.	Tramway Workers	4
25.	Errand Boys	4
26.	Commercial Travellers	2
27.	Insurance Agents	4
28.	Butchers	2
29.	Boot and Shoe Repairers	3
30.	Miscellaneous Occupations	27
31.	No Occupation	15
		263

FEMALES.

1.	Clerks and Typists	10
2.	Makers of Wearing Apparel	26
3.	Shop Assistants	9
4.	Cotton Workers	11
5.	Wire Workers	3
6.	Housewives	79
7.	Charwomen and Laundresses	6
8.	Confectioners	3
9.	Boxmakers	3
10.	Domestic Servants	6
11.	Packers	8
12.	Waitresses	2
13.	Scholars	9
14.	Miscellaneous Occupations	27
15.	No Occupations	7
	Total	209

During the year 1932, 124 new notifications of non-pulmonary tuberculosis have been received.

The new cases of non-pulmonary tuberculosis notified are classified in the following table :—

	Glands.	Bones.	Abdomen.	Skin.	Meninges.	Other forms.	Totals.
Under 10 years	16	10	8	2	10	1	47
10 to 20 years	16	6	6	1	3	6	38
20 to 30 ,,	4	8	2	..	1	..	15
30 to 40 ,,	4	2	3	2	1	1	13
Over 40	2	3	..	3	1	2	11
Totals	42	29	19	8	16	10	124

NAB TOP SANATORIUM.

Annual Report.

Resident Staff.—Medical Superintendent, Matron, Home Sister, two Ward Sisters, eleven Nurses, Cook, Laundress, seventeen Maids and Lodge Porter.

Non-Resident Staff.—Engineer, School-mistress, Porter, two Gardeners and Labourer.

Accommodation.—From April 1st to September 30th each year there is accommodation in the Sanatorium for 120 patients (62 adult males, 42 adult females, 8 male children, and 8 female children).

From October 1st to March 31st, accommodation is slightly less, namely 108 (50 adult males, 42 adult females, 8 male children, and 8 female children.

Type of Case Treated.—The Sanatorium is used for the treatment of early and intermediate cases of Phthisis.

A few advanced cases who show good resistance to the disease are also treated. A number of "observation" cases are admitted.

Lines of Treatment.—The treatment adopted is chiefly Hygienic—open air, rest and graduated exercise.

On admission, patients, after a period of rest in bed, are put on walking exercise, the distance being gradually increased. Afterwards this is supplemented by light ward work. Those who show a satisfactory resistance are then placed on graduated work, beginning with light gardening work and rising to heavier work such as grass cutting and lawn rolling, wheelbarrow work and digging. Walking exercise is taken round two fields, the circumference of that reserved for women being one-quarter mile, and that for men one-third of a mile.

An increasing number of patients are being treated by means of Artificial Pneumothorax, care being taken to limit the treatment to cases who are really suitable. Last year 22 cases were induced at the Sanatorium and refills carried out during the stay of the patients, averaging 6½ months. On leaving the Sanatorium the refills are continued at the Tuberculosis Dispensary, Regent Road.

The X-ray apparatus installed in late 1930 has been of great benefit in this work, as being the controlling agent in spacing the refills in Artificial Pneumothorax cases. In 1932 the X-ray apparatus was used over 400 times both for controlling these cases and in routine work. Over 200 X-ray photographs were also taken at the end of ordinary Sanatorium treatment, and these proved very beneficial in ascertaining the amount of improvement effected during the stay here of these patients.

FARM.—A poultry farm maintained on the premises supplies many of the eggs required for consumption. Most of the vegetables used in this Institution are also grown in the grounds of the Sanatorium.

RECREATION.—The dining hall is set apart for the use of patients every week-day from 5 to 6 p.m., and every Saturday evening after supper, where whist and other card games are indulged in. A wireless set is in daily use, each bed being provided with a pair of ear-phones. There is also a loud speaker in the dining hall. Concerts are arranged about once a month from October to April, given by voluntary entertainers, and on many occasions during the winter plays have been staged.

There is also a large bowling green and clock golf green for the men, and a bowling and croquet green for the women, on which varied and interesting competitions are frequently held during the summer months.

CANTEEN.—A canteen has been established in the grounds wherein are sold those articles likely to be used in everyday life.

EDUCATION.—The Medical Superintendent at frequent intervals delivers lectures to the patients on such subjects as "Pulmonary Tuberculosis," "Rules of Health" and "The Care of the Mouth and Teeth." It is hoped that on leaving, patients may carry out the instructions given in these lectures and thus minimise the spread of infection in their own homes.

An open-air school, under the guidance of a competent teacher, has been established for patients under 16 years of age. This has been a boon to those children whose state of health has not permitted them to attend the ordinary school at home. No child is allowed to attend school unless certified physically fit by the Medical Superintendent. It may be of interest to know that during the last two years a large number of prizes have been won by the School Children for educational subjects and handicrafts in competition with children from ordinary Day Schools in the Manchester area.

Appended is a table showing the number of admissions, etc., and the number of patient-days during the year 1932 :—

TABLE A—(Nab Top Sanatorium).

SHOWING THE NUMBER OF ADMISSIONS, ETC., AND THE NUMBER OF "PATIENT-DAYS" DURING THE YEAR 1932.

	Total Adults.		Children under 15.			Totals.		
	Males	Females	Males	Females	Both	Males	Females	Both.
ber of Patients ad- itted prior to 1932 o remained in Sana- rium for some part 1932	38	29	15	8	23	53	37	90
ber of "Patient- ys" in 1932 for tients admitted ior to 1932 who re- ained in Sanatorium some part of 1932..	3098	2030	1323	699	2022	4421	2729	7150
l admissions, 1932..	146	97	19	24	43	165	121	286
l discharges and aths, 1932	157	94	24	23	47	181	117	298
ber of "Patient- ys" for persons mitted during 1932	14590	10277	3191	1803	4994	17782	12080	29862
number of atient-days" for 32...............	17688	12307	4514	2502	7016	22202	14809	37011
age number of ientsinSanatorium h day during 1932	48·3	33·6	12·3	6·8	19·1	60·6	40·4	101·0

TE.—The term "Patient-days" represents the product of the number of patients and the number of days spent by those patients in the Sanatorium.

TABLE B.—Patients Discharged from Nab Top Sanatorium during 1932.

	Condition at Time of Discharge.	Duration of Residential Treatment in Institution.											
		Under 3 Months.			3 to 6 Months.			6 to 12 Months.			Over 12 Months.		
		M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.
Pulmonary Tuberculosis	Quiescent	..	1	2	11	13	5	2	4	2	..	..	..
	Not Quiescent ...	69	33	5	38	26	6	15	5	1	7	2	2
	Died	..	..	..	1	..	..	..	..	..	..	..	..
	Totals	69	34	7	50	39	11	17	9	3	7	2	2
Non-Pulmonary Tuberculosis	Quiescent	..	..	..	..	..	3	1	..	3	..	..	..
	Not Quiescent ...	3	..	3	..	1	4	1	..	2	..	..	..
	Died	..	..	..	..	..	..	..	..	..	..	..	..
	Totals	3	..	3	..	1	7	2	..	5	..	..	..
								Under 4 weeks.			Over 4 weeks.		
Observation for Purposes of Diagnosis			Tuberculous					2	2	1	2	..	1
			Non-Tuberculous..........					5	1	1	..	5	5
			Doubtful					..	1	1	..	..	..

LADYWELL SANATORIUM.

TABLE SHOWING THE NUMBER OF ADMISSIONS, ETC., AND THE NUMBER OF "PATIENT-DAYS" FOR 1932.

TUBERCULOSIS CASES.

	Males.	Females.	Totals.
Total Number of Admissions during 1932..	129	106	235
Number of Persons Admitted prior to 1932 who remained in Hospital for some part of 1932	38	26	64
Total Number of Discharges and Deaths during 1932	134	99	233
Patients in Hospital on the 31st December, 1932	34	32	66
Number of "Patient-days" for Persons Admitted during 1932.................	8791	8173	16964
Number of "Patient-days" (in 1932) for Persons Admitted prior to 1932 who remained in Hospital for some part of 1932..................................	3718	3436	7154
Total Number of "Patient-days" for 1932..	12509	11609	24118
Average Number of Patients in Hospital each day during 1932	34·17	31·72	65·89

LADYWELL SANATORIUM.

Report for the Year 1932.

At the beginning of the year there were 246 cases remaining in hospital; these, with the 1,960 admitted during the year, made a total of 2,206 cases under treatment. Of this total 1,887 were discharged, 113 died and 206 were in hospital at the end of the year. The number of cases treated, 2,206, compares with 2,096 in 1931, and with 2,220 the average of the cases treated for the five years ended December 31st, 1931.

The cases treated were as follows:—

Scarlet Fever	537
Mixed Infections	49
Measles	19
Enteric Fever	21
Diphtheria	845
Erysipelas	57
Puerperal Fever	25
Tuberculosis	299
Other Diseases	354
	2,206

The number of cases admitted from Out-Districts was 431, as compared with 383 in 1931. The daily average number of patients in 1932 was 239, the highest being 275 on February 7th, and the lowest 181 on August 27th; 1960 patients were admitted during the year, as compared with 1,830 in 1931 and with 1980 the average for the five years ended December 31st, 1931. The following summary shows the diagnosis of the cases before admission and after observation in hospital:—

	Diagnosis before Admission.	Diagnosis after Observation.
Scarlet Fever	551	496
Mixed Infections	20	37
Measles	15	18
Enteric Fever	24	18
Diphtheria	938	746
Erysipelas	69	53
Puerperal Fever	22	24
Tuberculosis	235	235
Other Diseases	86	333
	1,960	1,960

Details of the alterations in diagnosis will be found in tables V. and VI., pages 104 and 105. A tabulation of cases classified as "Other Diseases" will be found on page 105.

Mixed Diseases.—Thirty-six of the patients discharged were found to be suffering from two distinct diseases, as follows:—

Scarlet Fever and Chicken Pox	3
Scarlet Fever and Whooping Cough	1
Scarlet Fever and Diphtheria	10
Scarlet Fever and Purpura	1
Scarlet Fever and Pneumonia	1
Scarlet Fever and Measles	2
Diphtheria and Chicken Pox	3
Diphtheria and Measles	5
Diphtheria and Whooping Cough	2
Measles and Tonsillitis	1
Measles and Whooping Cough	1
Measles and Broncho-Pneumonia	1
Measles and Bronchitis	1
Erysipelas and Rheumatoid Arthritis	1
Erysipelas and Tuberculosis	2
Tonsillitis and Whooping Cough	1
	36

Deaths from Mixed Infections.—In this group the concurrent affections directly or partially caused a fatal termination in five cases, as follows:—

Scarlet Fever and Empyema	1
Measles and Broncho-Pneumonia	1
Erysipelas and Marasmus	1
Erysipelas and Syphilitic Encephalitis	1
Erysipelas and Pernicious Anaemia	1
	5

The average stay in hospital for all mixed diseases cases discharged well in 1932, was 63·2 days, and for those that died 11 days.

Cross Infection.—The above cases of Mixed Infection, and cases admitted under a wrong diagnosis in which the actual diseases could only be ascertained after a time, gave rise to secondary infections in the wards. Every effort was made to prevent cross infection by careful examination of new patients before admission to the wards, and by employing the usual methods of Dick and Schick tests and immunisation of susceptibles. In spite of these precautions, it has always, and more especially when the wards are full, been difficult to prevent the spread of any infection in the wards in this hospital, owing to the fact that much too great a proportion of the beds are in large wards and that the isolation accommodation is in proportion quite inadequate. In large wards, in contrast to small wards, the chance of another infection being brought in by new admissions is greatly increased, and a larger number of patients are exposed to the infection once it appears there. The addition of a 20 cubicle block was proposed and approved in 1930, but postponed for economy reasons.

The number of patients discharged in 1932 who contracted another infection was as follows :—

Sent in as :—	Secondary Infection :—	
Scarlet Fever	Chicken Pox	1
,, ,,	Diphtheria	2
,, ,,	Erysipelas	1
,, ,,	Measles	5
,, ,,	Mumps	1
,, ,,	Rubella	1
Diphtheria	Chicken Pox	1
,,	Measles	9
,,	Rubella	2
,,	Scarlet Fever	1
Mixed Infections	Chicken Pox	1
,, ,,	Diphtheria	1
,, ,,	Measles	1
Rubella	Scarlet Fever	1
Tonsillitis	Chicken Pox	1
		29

The average stay in hospital for the 29 cross-infected cases discharged well in 1932 was 84·9 days, and for the one fatal case 60 days. The particulars of the fatal case are as follows :—A male, aged four years, was sent in as Scarlet Fever and developed Measles and Broncho-Pneumonia.

The total number of cases discharged in 1932 was as follows :—

Disease.	Number.
Scarlet Fever	487
Mixed Infections	36
Measles	19
Enteric Fever	18
Diphtheria	745
Erysipelas	50
Puerperal Fever	23
Tuberculosis	183
Other Diseases	326
	1,887

The average stay in hospital for all cases discharged during 1932, was ; for scarlet fever 37·74 days ; for mixed infections 60·27 ; for measles 30·2 : for enteric fever 62·4 ; for diphtheria 47·8 ; for erysipelas 23·4 ; for puerperal fever 54·2 ; for tuberculosis 104·0 ; for other diseases 28·2.

Deaths.—The total number of fatal cases in 1932 was as follows :—

Scarlet Fever	4
Diphtheria	36
Mixed Infections	5
Enteric Fever	1
Erysipelas	5
Puerperal Fever	2
Tuberculosis	51
Diabetic Coma	1
Cerebro-Spinal Meningitis	5
Cellulitis	1
Otitis Media, Cerebral Abscess. Meningitis	1
Rubella, Peritonsillar Abscess, Empyema frontal sinus	1
	113

The average stay in hospital for all fatal cases, excepting advanced Tuberculosis, was 12·54 days.

The daily average number of patients in hospital in 1932 was 239·1, as compared with 217·9 in 1931, and with 232·0 the daily average of the numbers in the five years ended December 31st, 1931.

There were remaining in hospital on December 31st, 1932, 206 cases, as compared with 246 last year. The cases remaining on December 31st, 1932, were :—Scarlet fever 46, mixed infections 8, enteric fever 2, diphtheria 64, erysipelas 2, tuberculosis 66, and other diseases 18.

Forty-three of the cases remaining were from out-districts, as compared with 50 the year before.

DETAILED INFORMATION ABOUT SOME DISEASES.

Scarlet Fever.

The number of cases of this disease admitted in 1932 was 496, as against 523 in 1931. 551 cases were certified as having scarlet fever, but in 82 cases the diagnosis had to be revised. In addition, 22 cases certified as diphtheria and five cases of mixed infections proved to be scarlet fever. 487 cases were discharged well during the year, as against 547 last year. There were four deaths from this disease, giving a fatality rate of 0·82 per cent. The details of the fatal cases are as follows :—

A male, aged four years, was admitted as scarlet fever and developed Measles and Broncho-Pneumonia.

A male, aged four years, died from nephritis and suppression of urine.

A male, aged three years, died from cellulitis (neck) and septicæmia.

A male, aged three years, died from septic scarlet fever.

The type of the disease was mild. Scarlatinal antitoxin was given intramuscularly in 5 -10 c.c. doses to all but the very mild cases. The more important complications were as follows :—

	No.	Percentage of Discharged Cases.
Adenitis and Abscess (13)	317	65·09
Rhinitis....................................	25	5·13
Otorrhœa and Otitis Media	49	10·06
Relapse	8	1·64

Other complications were as follows :—Albuminuria, 8 ; bronchitis, 1 ; carrier, 1 ; cholecystitis, 1 ; endocarditis, 1 ; hæmaturia, 1 ; herpes facialis, 1, ; mastoiditis, 4 ; mastitis, 1 ; nephritis, 2 ; paronychia, 3 ; peritonitis, 1 ; pyelitis, 3 ; rheumatism, 1 ; serum rash, 3 ; tonsillitis, 5.

Eleven cases developed another infection : Chicken pox, 1 ; diphtheria, 2 ; mumps, 1 ; erysipelas, 1 ; measles, 5 ; rubella, 1.

The average stay in hospital for all cases discharged well was 37·74 days, and the fatal cases 19·25 days.

The following table indicates the period of residence of the 476 cases of scarlet fever uncomplicated with another disease who were discharged well in 1932 :—

Week of Discharge.	Number of Days in Residence when Discharged.							Number of Cases in each Day.							No. of Cases in each Week.
Under fourth	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Fourth	22	23	24	25	26	27	28	..	..	2	2	4	8	18	34
Fifth	29	30	31	32	33	34	35	45	58	48	40	47	45	28	311
Sixth	36	37	38	39	40	41	42	18	12	12	8	2	3	9	64
Seventh..........	43	44	45	46	47	48	49	5	7	5	1	3	..	1	22
Eighth...........	50	51	52	53	54	55	56	1	2	2	1	3	5	1	15
Ninth	57	58	59	60	61	62	63	2	..	3	1	1	..	1	8
Tenth	64	65	66	67	68	69	70	1	..	1	1	2	..	..	5
Over Tenth	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16

Total Number of Cases.....................................476

Return Cases.—Information about these is usually obtainable from Salford only. Five such cases were reported. This gives a return rate of of 1·5 per cent for Salford.

Schick Test in Scarlet Fever and other Diseases.

The following table shows the age distribution of patients suffering from scarlet fever and other diseases who underwent the Schick test :—

	Age Periods.												
	Under 1 Yr.	1	2	3	4	5	6	7	8	9	10	Over 10	Total
Positive....	..	1	3	1	3	10	16	9	11	12	5	22	93
Negative ..	..	..	1	3	2	9	11	10	13	7	15	84	155
Totals ...	..	1	4	4	5	19	27	19	24	19	20	106	248

Immunized : 3 doses, 96 ; 2 doses, 68 ; 1 dose, 9.

Diphtheria.

746 cases were admitted during the year and 99 remained from 1931 ; of these 745 were discharged well, 36 died and 64 remained in hospital at the end of the year. 938 cases were admitted certified as diphtheria, but in 198 cases the diagnosis had to be revised ; in addition, one " other disease," four cases admitted as scarlet fever, and one case admitted as a mixed infection proved to be diphtheria. The disease was of an exceptionally malignant type as shown by the large number of severe cases. In a large number (132) of the most severe cases part of the antitoxin was given intravenously and in many instances repeatedly.

Type of Disease.

Of the discharged cases, 634 were faucial, 15 laryngeal, 27 nasal, two faucial and nasal, and one faucial and laryngeal. There were also 66 cases of bacteriological diphtheria.

Faucial Diphtheria.

In 667 cases, including 33 fatal, the faucial region of the throat was affected.

Mild.—312 cases were mild, the deposit on the throat being localized to the tonsils with little or no toxæmia. The average amount of serum given was 11,835 units. All these mild cases made a complete recovery. 29 cases had antitoxin before admission.

Complications and Sequelæ :—Adenitis, 38 ; adenitis and quinsy, 1 ; adenitis and rhinitis, 1 ; adenitis, rhinitis and tonsillitis, 1 ; adenitis and tonsillitis, 1 ; adenitis, carrier and paronychia, 1 ; albuminuria and urticaria, 1 ; abscess, 2 ; bradycardia, 2 ; carrier, 8 ; mitral incompetence, 1 ; otorrhœa, 5 ; paronychia, 2 ; palatal paresis, 1 ; rhinitis, otorrhœa and bronchitis, 1 ; tonsillitis, 7 ; whitlow, 1.

Three cases contracted Measles.

One case contracted Chicken Pox.

Moderate.—In 178 cases the membrane was more extensive and was accompanied by toxæmia. The average amount of serum given was 22,240 units. 12 cases received antitoxin before admission.

Complications and Sequelæ :—Adenitis, 31 ; adenitis and otorrhœa, 1 ; abortion, 1 ; albuminuria, 21 ; adenitis and blepharitis, 1 ; albuminuria, cardiac irregularity and adenitis, 1 ; abscess, 1 ; bradycardia, 3 ; carrier, 1 ; furunculosis, 3 ; furunculosis and strabismus, 1 ; glycosuria, 1 ; hæmaturia and bradycardia, 1 ; myocarditis, 1 ; otorrhœa, 4 ; paronychia, 5 ; peritonsillar abscess, 1 ; palatal paresis, 1 ; palatal paresis, lower limb paresis, impetigo and cycloplegia, 1 ; rhinitis, 5 ; rhinitis, palatal paresis and otorrhœa, 1 ; rheumatism, 1 ; strabismus, 1 ; tonsillitis, 1 ; tonsillitis and adenitis, 3 ; tonsillitis and carrier, 1.

Two cases contracted Measles.

Two cases contracted Rubella.

Severe.—177 cases, including 33 fatal, were of the severe type. The average amount of serum given for 144 discharged was 82,272 units, and for the 33 fatal cases 97,160 units. 20 cases, including three fatal, received antitoxin before admission.

Complications and Sequelæ.—Adenitis and otorrhœa, 2 ; adenitis, and purpura, 1 ; adenitis and carrier, 1 ; adenitis, strabismus and palatal paresis, 2 ; adenitis and albuminuria, 1 ; abscess, impetigo, otorrhœa, palatal and ocular paresis, 1 ; albuminuria, 1 ; albuminuria, strabismus, nasal and faucial paresis, 1 ; adenitis and tonsillitis, 1 ; adenitis, 21 ; adenitis and palatal paralysis, 2 ; adenitis, abscess and otorrhœa, 1 ; adenitis, palatal paresis and pharyngeal paralysis, 2 ; adenitis, palatal paresis and tonsillitis, 1 ; adenitis and rhinitis, 1 ; albuminuria and strabismus, 1 ; albuminuria, adenitis and palatal paresis, 1 ; albuminuria, myocarditis and palatal paresis, 1 ; adenitis, palatal paresis and strabismus, 2 ; adenitis and convulsions, 1 ; bradycardia, 3 ; bronchopneumonia, 1 ; chorea and cycloplegia, 1 ; carrier and tonsillitis, 1 ; carrier, otorrhœa, impetigo and rhinitis, 1 ; dermatitis, 1 ; dermatitis and palatal paresis, 1 ; enteritis, 1 ; furunculosis, 3 ; furunculosis and palatal paresis, 2; hordeolum, 1: hæmaturia and paronychia, 1; impetigo, otorrhœa and endocarditis, 1; lower limb paresis, palatal paresis, adenitis and strabismus, 1; lower limb and palatal paresis, 1; myocarditis, 2; otorrhœa, strabismus, palatal paresis and conjuctivitis, 1; otorrhœa, rhinitis and palatal paresis, 1; otorrhœa, 1; otorrhœa and palatal paresis, 4; otorrhœa, palatal and ocular paralysis, 1; palatal paresis, 15; paronychia, 2; palatal paresis and myocarditis, 1; rhinitis, 1; septic thumb and carrier, 1; tonsillitis, 1.

One case contracted Scarlet Fever.

Three cases contracted Measles.

COMPLICATIONS OF FATAL CASES.—Circulatory paralysis, 25; circulatory, palatal and pharyngeal paralysis, 1; circulatory paralysis and adenitis, 1; palatal and pharyngeal paralysis and broncho-pneumonia, 1.

Laryngeal Diphtheria.

In 17 cases, including two fatal, the larynx was involved.

MILD.—In eight cases the laryngeal obstruction was slight. The average amount of serum given was 15,000 units.

COMPLICATIONS:—Abscess (groin), adenitis and furunculosis, 1.

MODERATE.—In five cases the laryngeal obstruction was moderately severe. The average amount of serum given was 20,000 units.

COMPLICATIONS AND SEQUELÆ:—Broncho-pneumonia, 1; bradycardia, 1: carrier, 1.

SEVERE.—In four cases, including two fatal, the obstruction to the breathing was severe. Three cases required tracheotomy. Tracheotomy gave only temporary relief to the fatal cases, the membrane having extended too far down. The average amount of serum given was 52,000 units to the discharged cases, and 26,000 units to the two fatal. One fatal case had received serum before admission.

Faucial and Laryngeal Diphtheria.

The fauces and larynx were involved in two severe cases. The average amount of serum given was, for the severe case discharged 72,000 units and for the fatal case 72,000 units. The fatal case required tracheotomy.

COMPLICATIONS OF FATAL CASE:—Circulatory paralysis.

Nasal Diphtheria.

There were 27 cases of this type ; 23 mild and four moderate. The average amount of serum given to the mild cases was 10,434 units ; four cases received antitoxin before admission.

Complications and Sequelæ :—Adenitis, 4 ; adenitis and enteritis, 1 ; adenitis and rhinitis, 2 ; adenitis, otorrhœa and rhinitis, 1 ; abscess, 1 ; carrier and adenitis, 2 ; otorrhœa, 2 ; rhinitis, 4.

One case contracted Measles.

The four moderate cases were given an average of 7,000 units of serum ; three cases received antitoxin before admission.

Faucial and Nasal Diphtheria.

There were two moderate cases of this type of diphtheria. The average amount of antitoxin given was 36,000 units. One case received antitoxin before admission.

Complication :—Adenitis, 1.

The following table summarises the sites of membrane in the total clinical cases discharged :—

Site of Membrane.	Mild.		Moderate.		Severe.		Total.	
	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.
Faucial	312	..	178	..	144	33	634	33
Laryngeal	8	..	5	..	2	2	15	2
Faucial and Laryngeal .	..	..	..	..	1	1	1	1
Nasal	23	..	4	..	..	..	27	..
Faucial and Nasal	..	..	2	..	..	..	2	..
Totals	343	..	189	..	147	36	679	36

Diphtheritic Paralysis.—48, or 7·05 per cent, of the clinical cases discharged had paralysis in one form or another whilst in hospital.

COMPLICATIONS.—279, or 41·09 per cent, of the recovered cases developed one or more complications. This figure does not include serum rashes.

TRACHEOTOMY was performed in four instances, with two fatalities.

FATALITY RATE.—36, or 5·0 per cent, of the clinical cases were fatal.

ANTITOXIN.—66, or 9·72 per cent, of the cases discharged and five of the fatal cases had antitoxin before admission to the hospital. The average amount of serum given in hospital in the recovered cases was 23,600 units and 92,500 units in the fatal cases. In addition, 132 cases, including 22 fatal cases, had part of the serum injected intravenously.

Dick Test in Diphtheria.

The Dick Test was performed in 629 cases of diphtheria ; 400 of these were positive and 229 negative. The positive reactors were inoculated with scarlet fever prophylactic at weekly intervals (500, 2,000, 6,000, 15,000 skin test doses.) One case of scarlet fever occurred amongst diphtheria patients during the year.

	Age Periods.												Totals.
	Under 1 Yr.	1	2	3	4	5	6	7	8	9	10	Over 10	
Positive. .	3	9	22	38	38	46	48	32	38	31	21	74	400
Negative	. .	3	6	9	11	24	25	15	22	22	9	83	229
Totals . . .	3	12	28	47	49	70	73	47	60	53	30	157	629

Enteric Fever.

24 cases were admitted under this diagnosis, but in six instances this had to be revised. Three cases remained from the previous year. 18 cases were discharged well, one proved fatal, and two were in hospital at the end of the year.

COMPLICATIONS :—Pleurisy, 1 ; tenesmus and fæcal concretion, 1.

Puerperal Fever.

22 cases were admitted under this diagnosis, and two other diseases proved to be puerperal fever.

Of the 25 cases under treatment, 23 were discharged and two died. The 23 discharged cases were classified as follows :—Puerperal fever, 13 ; puerperal sepsis, 7 ; puerperal septicæmia, 1 ; incomplete abortion, 1 ; and leucorrhœa, 1. The two fatal cases succumbed from septicæmia.

COMPLICATIONS IN DISCHARGED CASES :—Bronchitis, 1 ; phlegmasia alba dolens, 1 ; pyelitis, 1 ; salpingitis, 2.

COMPLICATIONS IN FATAL CASES :—Abscesses (wrist and thigh) and phlegmasia alba dolens, 1.

There were 19 babies admitted with their mothers.

Erysipelas.

69 cases were admitted as erysipelas during the year, but in 16 instances the diagnosis had to be revised. Of the 57 cases under treatment, 50 were discharged well, five died and two were in hospital at the end of the year.

COMPLICATIONS OF THE DISCHARGED CASES :—Adenitis, 2 ; abscess, 3 ; serum rash, 2 ; cellulitis, 2 ; otorrhœa, 3 ; nephritis, 1.

COMPLICATIONS OF THE FATAL CASES :—Broncho-pneumonia, 1 ; toxæmia and albuminuria, 1.

Cerebro-Spinal Fever.

Of the 13 cases admitted, 11 proved to have cerebro-spinal fever ; one other, in addition, was admitted as a doubtful enteric fever.

Of 12 cases seven recovered and five died. Seven were males and five females. The average age was 10·1 years, and the average duration of residence was 32·1 days. The average number of days of illness before admission was 4·5.

COMPLICATIONS : One fatal case developed pharyngeal paralysis ; one recovered case became deaf.

Two died within 24 hours of admission.

Serum was given intrathecally in every case daily until temperature came down and cerebro-spinal fluid became fairly clear and meningococci were absent ; it was given intravenously or intramuscularly as required in the acute stages. The average amount of concentrated serum given intrathecally and intravenously or intramuscularly in the recovered cases was 86 c.c. and 70 c.c. respectively, the highest being 150 c.c. and 165 c.c. and the lowest 45 c.c. and 20 c.c. ; and in the fatal cases 64 c.c. and 69 c.c., the highest being 165 c.c. and 150 c.c. and the lowest 10 c.c. and none.

The number of punctures performed in the recovered cases was :— Average 9·4, highest 16, lowest 2.

Four of the recovered cases had a Lumbar Puncture performed before admission and three had serum intrathecally, and the fatal case had a Lumbar Puncture and serum.

STAFF.—On December 31st, 1932, the resident staff of the Sanatorium consisted of the following :—

Medical Superintendent	1
Assistant Resident Medical Officers	2
City Bacteriologist	1
Matron	1
Assistant Matron	1
Stores Sister	1
Sister Tutor	1
Night Sister	1
Ward Sisters	7
Staff Nurses	14
Assistant Nurses	10
Probationers	28
Cook	1
Domestics	36
Laundress	1
Lodge Porters	2
Total Resident Staff	108

The Non-resident Staff consisted of :—

Visiting Aural Surgeon	1
Clerk	1
Junior Clerk	1
Engineer	1
Plumber	1
Firemen	3
Gardener	1
Assistant Gardeners	2
Porters	5
Seamstresses	2
Cleaner	1
Total Non-resident Staff	19

HEALTH OF STAFF.—The following were the illnesses :—Abscesses, 2 ; arthritis, 1 ; adenitis, 1 ; bronchitis, 1 ; coryza, 2 ; carbuncle, 1 ; diphtheria, 2 ; furunculosis, 1 ; inflammation, 1 ; influenza, 3 ; mumps, 2 ; ovarian cyst, 1 ; palatal paresis, 1 ; peritonsillar abscess, 4 ; pleuro-dynia, 3 ; acute rheumatism, 3 ; rheumatic endocarditis, 1 ; scarlet fever, 2 ; sinusitis, 1 ; tonsillitis, 5.

The staff lost 1,263 working days through illness.

The staff, both nurses and maids, have been tested by the Schick and Dick tests, and, if positive, immunized against diphtheria and scarlet fever.

51 were Schick tested ; the positives were inoculated with three doses of Toxoid at fortnightly intervals. Three months later 12 were retested, the others having left, and two were still positive; they received one more inoculation and a month later were negative.

50 had the Dick test done, and 12 of these were positive ; they were inoculated with 500, 2,000, 6,000 and 15,000 skin test doses of Scarlatinal Toxin, and of 12, on a retest a month later, one still remained positive ; a further dose was given, and a month after a negative test was obtained.

Two probationer-nurses contracted diphtheria in a mild form. Both nurses were Schick tested on joining and gave positive reactions ; they had received only one dose of Toxoid at the time of becoming ill.

Two probationer-nurses contracted scarlet fever. One was Dick positive and had received two doses of Scarlet Fever Prophylactic. She developed middle ear disease on both sides and a bilateral mastoid operation had to be done. She recovered completely. The other's Dick test was only very faintly positive, and she was not immunized ; 14 months after she contracted a mild form of scarlet fever.

Work of the Training School.—During the year nine passed the Preliminary and six the Final State examinations. The usual course of lectures was given by the Medical Staff and the Sister Tutor.

Operating Theatre.

The number of operations in the theatre was 13, all requiring general anæsthesia ; minor operations are not included ; numerous incisions were done on the wards, some requiring general nitrous oxide gas anæsthesia ; others required local anæsthetics only.

Particulars of the operations in the theatre are :—

Disease.	Complications.	Operation.	Recov.	Died.	Total.
Scarlet Fever	Otorrhœa	Tonsillectomy and Adenoidectomy	2	—	2
Scarlet Fever	Otorrhœa Acute Mastoiditis ...	Tonsillectomy and Adenoidectomy Schwartzes Operation	2	—	2
Scarlet Fever	Otorrhœa Acute Mastoiditis ...	Schwartzes Operation	1	—	1
Scarlet Fever and Measles	Otorrhœa Acute Mastoiditis ...	Schwartzes Operation	1	—	1
Scarlet Fever and Measles	Otorrhœa Acute Mastoiditis ...	Jugular vein ligated	1	—	1
Diphtheria and Scarlet Fever ..	Otorrhœa Acute Mastoiditis ...	Schwartzes Operation	1	—	1
Diphtheria	Otorrhœa	Schwartzes Operation	1	—	1
Diphtheria	Otorrhœa	Tonsillectomy and Adenoidectomy	1	—	1
Acute Mastoiditis	Otorrhœa	Schwartzes Operation	1	—	1
Septic Throat ...	Otorrhœa Acute Mastoiditis ...	Schwartzes Operation	1	—	1
Suppurative Otitis Media ...	Extradural Abscess	Schwartzes Operation	—	1*	1
*Died subsequently from Meningitis.			12	1	13

Bed Isolation Ward.

This ward contains 16 beds. Each patient is nursed separately from the others and nothing which has been in contact with the patient or anything from his bed is allowed to touch any other patient or bed, unless it has been sterilized. This sterilization is done by steam if possible, or by liquid disinfectants. Nurses have to wear separate gowns, and scrub their hands every time they attend a patient.

Free ventilation is also insisted upon. All varieties of diseases were admitted. The ward was busy all through the year, the demand for isolation being always great.

178 cases were admitted during the year.

The following is a table of the diseases :—

Sent in as—		Diagnosis after observation.	
Scarlet Fever	58	Scarlet Fever	31
		Adenitis	1
		Diphtheria	2
		Erythema	3
		Furunculosis	1
		Mastoiditis	1
		Rhinitis	1
		Rubella	8
		Observation	1
		Tonsillitis	7
		Scarlet Fever and Chicken Pox	1
		Tonsillitis and Whooping Cough	1
Diphtheria	93	Diphtheria	39
		Bronchitis	1
		Laryngitis	3
		Scarlet Fever	8
		Septic Throat	1
		Tonsillitis	33
		Diphtheria and Scarlet Fever	3
		Diphtheria and Whooping Cough	1
		Diphtheria and Mumps	1
		Diphtheria and Chicken Pox	1
		Tonsillitis and Measles	2
Enteric Fever	7	Enteric Fever	5
		Hodgkins Disease	1
		Influenza	1
Measles	1	Measles and Whooping Cough	1
Erysipelas	4	Erysipelas	1
		Impetigo	1
		Erysipelas and Tuberculosis	2
		Carried forward	163

Sent in as—		Diagnosis after observation.	
		Brought forward	163
Cerebro-Spinal Meningitis	4	Cerebro-Spinal Meningitis	3
		Cerebral Abscess	1
Broncho-Pneumonia	1	Broncho-Pneumonia	1
Whooping Cough	1	Whooping Cough	1
Measles and Pneumonia	2	Measles	2
Diphtheria and Scarlet Fever	3	Scarlet Fever	3
Scarlet Fever and Chicken Pox	2	Scarlet Fever and Chicken Pox	1
		Scarlet Fever	1
Scarlet Fever and Mumps	1	Mumps	1
Diphtheria and Measles	1	Measles	1
	178		178

Report by W. B. McKelvie, M.D., F.R.C.S.E.

Aural Surgeon to the Hospital.

The work this year has proceeded along the lines of last year's routine.

The number of patients suffering from ear complications in the various fevers appears to be maintained at much the same level, and, as has been now generally recognised, appears to be but little affected by the use of, in the case of scarlet fever, the antiserum treatment.

We continue to see in the Hospital cases of "septic" scarlet fever, in which the patient is grievously ill and, not uncommonly, on admission, has a profuse purulent discharge from one or both ears. The cases are found generally, in spite of the most active local treatment and the use of serum, to move steadily towards extensive destruction of the temporal bone and, in many cases, the formation of subperiosteal abscess. We have found it possible in this type of case fairly accurately to determine beforehand which cases will require operative treatment directed to the mastoid.

As Leidler of Vienna has taught, cases which develop subperiosteal abscess do not, as a rule, later develop an intracranial complication. This has been borne out by our experience in the Hospital and elsewhere. There appear to be several reasons for this immunity, the more obvious one being the fact that tension is early relieved by perforation of the mastoid cortex. (In these cases while the abscess may be quite large the temperature of the patient is not usually raised above the 99 degrees or even above the normal level).

In these cases of subperiosteal mastoid abscess it has been found that it is possible (in cases in which a " septic " scarlet fever has been the cause of the ear trouble) to wait for some days, sometimes even as long as a week, after it has become obvious that a subperiosteal abscess has developed before doing the Schwartze mastoid operation, and it is felt that much better results have been achieved by doing this. Alexander pointed out that in mastoiditis generally, it was at times wise to await the formation of a more localised area of bone destruction and infection rather than to operate too early and deal with the disease when the lining of the mastoid cells was merely in the early stages of the inflammatory reaction.

It was noticed that in these cases of subperiosteal abscess abatement of the discharge from the meatus was not the rule.

Tho Wilde incision, as practised apparently by Layton, is not employed, as it is felt that no greater risk, and very probably much less danger of continued aural discharge, is likely to result if a thorough opening up of the mastoid cell groups, on the lines of the Neumann technique, is undertaken.

The results of the operative treatment of these cases have been good. It must be noted that the majority of the cases of mastoiditis have occurred in children since we commenced the work here in 1928.

Since 1928, only three operated cases developed complications. The first of these cases—a diphtheria—developed a mastoiditis with, apparently, a generalised blood infection at the beginning of the trouble which led to a fatal result. Another case showed a typical sinus thrombosis which required removal of the clot from the lateral sinus and ligation of the internal jugular vein. This case recovered. The third case showed extradural abscess formation in the posterior fossa which yielded excellent results from immediate location and drainage.

The results of the treatment of uncomplicated otitis media continue to be fairly satisfactory—the percentage of those leaving the hospital with healed drums not varying much from year to year. Those entering the Hospital with ear trouble already present still, however, fail, in the majority of cases, to benefit greatly by treatment, and it is felt that recent moves to deal with trouble of this kind in Infant Welfare Centres, as suggested in a recent Ministry of Health memorandum, may do something to solve the problem for us as well as to reduce the frequency of deaths from meningitis, frequently of otitic origin, in infants.

Appended are the usual statistical tables.

TABULATION OF CASES WHICH HAVE BEEN CLASSIFIED AS "OTHER DISEASES" AFTER OBSERVATION.

Abscess	14
Adenitis	3
Arthritis	1
Bronchitis	10
Broncho-pneumonia	2
Cellulitis	4
Cerebro-Spinal Fever	12
Colitis	2
Coryza	2
Cerebral Abscess	1
Cerebral Hæmorrhage	1
Chicken Pox	6
Carbuncle	1
Dermatitis	1
Diabetic Coma	1
Erythema	9
Enteritis	2
Furunculosis	3
Hodgkins Disease	1
Influenza	11
Impetigo	1
Inflammation	2
Laryngitis	7
Leukæmia	1
Mastoiditis	1
Meningitis	1
Myositis	1
Mumps	3
Observation	2
Otorrhœa	2
Otitis Media	1
Palatal Paresis	1
Pleuro-dynia	2
Rheumatic Endocarditis	1
Rheumatism	3
Rubella	29
Rhinitis	3
Sinusitis	1
Septic Throat	3
Syphilis	1
Tonsillitis	158
Vincents Angina	1
Whooping Cough	2
With mother	19
Total	333

TABLE I.

STATEMENT OF THE NUMBER OF PATIENTS UNDER TREATMENT IN LADYWELL SANATORIUM IN 1932.

	Males.		Females.		Totals.
	Under 5 years.	Over 5 years.	Under 5 years.	Over 5 years.	
I.—PATIENTS REMAINING IN HOSPITAL ON DECEMBER 31ST. 1931. AFFECTED WITH:					
Scarlet Fever	6	11	9	15	41
Mixed Infections........	3	4	..	5	12
Measles	1	..	..	..	1
Enteric Fever	..	1	..	2	3
Diphtheria	12	36	14	37	99
Erysipelas	..	2	..	2	4
Puerperal Fever	..	..	..	1	1
Tuberculosis............	..	36	..	28	64
Other Diseases	2	9	2	8	21
Totals	24	99	25	98	246
II.—ADMITTED DURING THE YEAR ENDED DECEMBER 31ST, 1932. AFFECTED WITH :					
Scarlet Fever	80	138	68	210	496
Mixed Infections	10	11	5	11	37
Measles	7	..	9	2	18
Enteric Fever	..	10	..	8	18
Diphtheria	91	243	67	345	746
Erysipelas	..	32	2	19	53
Puerperal Fever	..	..	..	24	24
Advanced Tuberculosis..	..	128	..	107	235
Other Diseases	44	85	43	161	333
Totals	232	647	194	887	1960
Total under treatment 1932	256	746	219	985	2206
III.—OF THE ABOVE THERE WERE DISCHARGED. RECOVERED FROM :					
Scarlet Fever	77	134	72	204	487
Mixed Infections........	9	13	2	12	36
Measles	8	..	9	2	19
Enteric Fever	..	9	..	9	18
Diphtheria	89	249	69	338	745
Erysipelas	..	31	1	18	50
Puerperal Fever	..	..	..	23	23
Tuberculosis	..	94	..	89	183
Other Diseases	42	85	42	157	326
Totals	225	615	195	852	1887

TABLE I.—*Continued.*

STATEMENT OF NUMBER OF PATIENTS—*Continued.*

	Males.		Females.		Totals.
	Under 5 years	Over 5 years.	Under 5 years.	Over 5 years.	
IV.—DIED FROM :					
Scarlet Fever	3	1	..	..	4
Mixed Infections	2	1	1	1	5
Measles	..	..	..	..	..
Enteric Fever	..	1	..	..	1
Diphtheria	5	12	4	15	36
Erysipelas	..	2	1	2	5
Puerperal Fever	..	..	..	2	2
Tuberculosis	..	36	..	15	51
Other Diseases	1	4	1	3	9
Totals	11	57	7	38	113
V.—REMAINING IN HOSPITAL ON DECEMBER 31ST, 1932, AFFECTED WITH :					
Scarlet Fever	6	14	5	21	46
Mixed Infections	2	1	2	3	8
Measles	..	..	..	..	..
Enteric Fever	..	1	..	1	2
Diphtheria	9	18	8	29	64
Erysipelas	..	1	..	1	2
Puerperal Fever	..	..	..	..	..
Tuberculosis	..	35	..	31	66
Other Diseases	3	4	2	9	18
Totals	20	74	17	95	206

TABLE II.

MONTHLY STATEMENT OF PATIENTS FOR THE YEAR ENDED DECEMBER 31ST, 1932; TOGETHER WITH A COMPARISON WITH THE YEAR 1931, AND WITH THE MEAN OF THE FIVE (5) AND FORTY-NINE (49) YEARS ENDED DECEMBER 31ST, 1931.

Month.	Admissions, 1932.	Admissions, 1931.	Mean of Admissions, 5 years, 1927-1931.	Mean of Admissions, 49 years, 1883-1931.	Daily Average No. of Patients in Hospital, 1932.	Daily Average No. of Patients in Hospital, 1931.	Mean of Daily Average No. of Patients in Hospital, 5 yrs., 1927-1931.	Mean of Daily Average No. of Patients in Hospital, 49 yrs., 1888-1931.
January	174	134	171·6	119·7	249·6	240·4	233·8	146·5
February.......	169	136	151·0	98·6	267·2	215·9	237·4	138·5
March	167	176	169·2	105·6	265·9	220·5	228·9	130·1
April	161	134	151·6	99·1	259·7	201·5	224·0	123·7
May	169	138	162·2	103·8	262·6	192·3	216·5	121·3
June	174	144	146·0	102·0	246·7	185·7	212·8	117·8
July	147	144	152·8	110·8	231·5	198·0	214·5	126·5
August	130	121	141·4	108·6	207·3	203·3	213·0	129·2
September	156	157	168·2	131·0	204·2	211·6	225·1	143·6
October	193	166	200·4	153·7	217·8	226·2	247·3	163·4
November......	173	189	182·0	142·2	230·2	242·5	265·2	174·3
December	147	191	183·6	125·9	226·3	277·3	265·6	162·3
Totals	1960	1830	..	..	..	..	..	..
M'thly Av'ges ..	163·3	152·5	165·0	116·7	239·1	217·9	232·0	139·8

TABLE III.

SHOWING THE NUMBER OF ADMISSIONS OF THE PRINCIPAL INFECTIOUS DISEASES FOR THE YEAR ENDED DECEMBER 31ST, 1932; ALSO A COMPARISON WITH THE YEAR 1931, AND WITH THE MEAN OF THE FIVE YEARS AND FORTY-NINE YEARS ENDED DECEMBER 31ST, 1931.

Month.	Scarlet Fever.	Mixed Diseases.	Measles.	Enteric Fever.	Typhus Fever.	Diphtheria.	Erysipelas.	Puerperal Fever.	Smallpox	Tuberculosis	Other Diseases.	Totals.
January	40	1	3	2	..	78	6	1	..	22	21	174
February	43	7	4	..	..	68	3	2	..	21	21	169
March	44	3	4	..	..	72	6	1	..	16	21	167
April	35	5	4	1	..	67	3	3	..	22	21	161
May	43	3	..	1	..	71	5	2	..	21	23	169
June	28	1	..	..	..	71	2	2	..	25	45	174
July	31	2	1	5	..	58	3	3	..	16	28	147
August	40	..	1	1	..	39	3	5	..	20	21	130
September	41	2	..	4	..	68	6	1	..	8	26	156
October	61	3	..	3	..	51	7	2	..	26	40	193
November	49	6	1	..	..	59	5	2	..	19	32	173
December	41	4	..	1	..	44	4	..	..	19	34	147
Totals	496	37	18	18	..	746	53	24	..	235	333	1960
Totals, 1931	523	59	14	4	..	655	73	15	..	277	210	1830
Increase, 1932	..	..	4	14	..	91	..	9	..	..	123	241
Decrease, 1932	27	22	..	..	..	..	20	..	..	42	..	111
Mean of 5 years 1927–1931	705·2	54·2	20·8	10·6	..	568·2	75·8	23·8	..	279·8	241·6	1980
Mean of 49 years—1883–1931	818·0	5·5	4·6	112·1	4·3	231·5	34·9	11·2	12·3	59·9	127·9	1405·6

TABLE IV.

ANNUAL STATEMENT.

Disease.	No. of Cases Remaining on Dec. 31st, 1931.	No. of Cases Treated.	No. of Cases Admitted.	No. of Cases Discharged.	No. of Deaths.	No. of Cases Remaining on Dec. 31st, 1932.
Scarlet Fever. .	41	537	496	487	4	46
Mix'd Infections	12	49	37	36	5	8
Measles	1	19	18	19	. .	. .
Enteric Fever. .	3	21	18	18	1	2
Diphtheria	99	845	746	745	36	64
Erysipelas.	4	57	53	50	5	2
Puerperal Fever	1	25	24	23	2	. .
Tuberculosis . .	64	299	235	183	50	66
Other Diseases.	21	354	333	326	10	18
Total	246	*2206	†1960	1887	113	‡206
Corresponding figures, 1931 .		2096	1830	1719	131	246
Average five years		2220	1980	1833	133	253

	From "Out-Districts."	From "Out-Districts."	From "Out-Districts."
1932.	*481	†431	‡43
1931.	456	383	50

TABLE V.—DISEASES ADMITTED.

CASES SENT IN AS	Total sent in.	HOSPITAL DIAGNOSIS.																																																					
		Scarlet Fever.	Mixed Infections.	Measles.	Enteric Fever.	Diphtheria.	Erysipelas.	Puerperal Fever.	Tuberculosis.	Abscess.	Adenitis.	Arthritis.	Bronchitis.	Broncho-Pneumonia.	Cellulitis.	Cerebro-Spinal Fever.	Colitis.	Coryza.	Cerebral Hæmorrhage.	Cerebral Abscess.	Chicken Pox.	Carbuncle.	Dermatitis.	Diabetic Coma.	Erythema.	Enteritis.	Furunculosis.	Hodgkin's Disease.	Influenza.	Impetigo.	Inflammation (Arm).	Inflammation (Nose).	Laryngitis.	Leukæmia.	Mastoiditis.	Meningitis.	Myositis.	Mumps.	Observation.	Otorrhœa.	Otitis Media.	Palatal Paresis.	Pleuro-Dynia.	Rheumatic Endocarditis.	Rheumatism.	Rubella.	Rhinitis.	Sinusitis.	Septic Throat.	Sore Throat.	Syphilis.	Tonsillitis.	Vincent's Angina.	Whooping Cough.	With Mother.
Scarlet Fever	551	469	10	2	..	4	..	..	..	..	1	..	4	..	..	..	..	..	..	..	2	..	1	..	8	..	1	..	2	..	..	..	..	..	1	..	..	1	1	..	..	..	..	..	..	28	1	..	..	1	..	14	..	..	..
Mixed Infections	20	5	5	5	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Measles	15	..	1	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Enteric Fever	24	..	..	..	18	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	2	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diphtheria	938	22	13	..	..	740	..	..	..	6	..	..	4	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	2	..	..	..	6	..	..	..	..	..	..	1	..	..	..	..	..	..	2	..	2	..	1	137	1	..	..
Erysipelas	69	..	6	..	..	..	53	..	..	2	1	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Fever	22	..	..	..	..	..	..	22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tuberculosis	235	..	..	..	..	..	..	..	235	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*Other Diseases	86	..	2	..	..	1	..	2	..	6	1	1	2	1	..	11	2	2	1	1	3	1	..	..	..	..	1	..	5	1	1	..	..	1	..	..	1	2	1	..	1	1	2	1	3	..	..	1	..	..	..	6	..	2	19
	1960	496	37	18	18	746	53	24	235	14	3	1	10	2	4	12	2	2	1	1	6	1	1	1	9	2	3	1	11	1	1	1	7	1	1	1	1	3	2	2	1	1	2	1	3	29	3	1	2	1	1	158	1	2	19

*Detailed in Table 6.

TABLE VI.

"Other Diseases" (See Table V.).

Sent in as :—		After Observation :—	
Adenitis	1	Adenitis	1
Arthritis	1	Arthritis	1
Abscess	6	Abscess	6
Bronchitis	1	Bronchitis	1
Cerebro-Spinal Fever	13	Cerebro-Spinal Fever	11
		Cerebral Hæmorrhage	1
		Cerebral Abscess	1
Chicken Pox	4	Chicken Pox	3
		Impetigo	1
Carbuncle	1	Carbuncle	1
Coryza	2	Coryza	2
Dysentery	2	Colitis	2
Furunculosis	1	Furunculosis	1
Influenza	3	Influenza	3
Inflammation (arm)	1	Inflammation (arm)	1
Malaria	2	Influenza	2
Myositis	1	Myositis	1
Mumps	2	Mumps	2
Meningitis	1	Otitis Media	1
Observation	1	Observation	1

Sent in as :—		After Observation :—	
Pneumonia	5	Pneumonia	1
		Puerperal Fever	2
		Whooping Cough	1
		Whooping Cough and Pneumonia	1
Palatal Paresis	1	Palatal Paresis	1
Pleuro-dynia	2	Pleuro-dynia	2
Rubella	1	Rubella and Impetigo	1
Rheumatism	3	Rheumatism	3
Rheumatic Endocarditis	1	Rheumatic Endocarditis	1
Septic Throat	1	Leukæmia	1
Sinusitis	1	Sinusitis	1
Tonsillitis	6	Tonsillitis	6
Vincent's Angina	1	Diphtheria	1
Whooping Cough	2	Whooping Cough	1
		Bronchitis	1
With Mother	19	With Mother	19
	86		86

Immunisation against Diphtheria.

At the beginning of 1932, the routine procedure for securing immunisation against diphtheria in Salford was confined to the holding of one session per week at clinics held at the Municipal Offices, Regent Road, Salford, and the Maternity and Child Welfare Centre and School Clinic, Teneriffe Street, Broughton. The possibility of conducting a large-scale campaign with the object of immunising a large percentage of the child population in a comparatively short time had been carefully considered prior to 1932, but the cost of such a scheme had been the decisive factor in bringing about its abandonment or, at any rate, its postponement for the time being. It was then thought that it might be possible to concentrate immunisation propaganda upon one school at a time, and, with the approval of the Education Committee, the Marlborough Road Council School was selected for this purpose in 1931. The parents of all children attending the school were circularised, and, with the assistance of the Teaching Staff, it was hoped to secure a substantial response. The results obtained, however, were so disappointing that no other similar attempt was made during 1931.

The attendances at the Regent Road Clinic have always been reasonably satisfactory, but early in 1932 it became apparent that the Teneriffe Street Clinic was not attracting a sufficiently large number of persons to justify its continuance, and it was definitely abandoned in May, 1932.

The experiences referred to above, combined with the very poor response obtained to personal propaganda carried on as a matter of routine by Sanitary Inspectors visiting houses in which cases of diphtheria had actually occurred, and by Health Visitors in the course of their visits to the houses of infants were, it must be confessed, distinctly discouraging. The only course open to the writer appeared to be to continue for the time being upon the same lines while awaiting the arrival of circumstances more favourable to the production of a greater sense of parental responsibility.

In October, 1932, a serious outbreak of diphtheria occurred among the children attending the Halton Bank Council School, which occasioned widespread concern among the parents of the children. It was at once decided to conduct an intensive campaign at this particular School. The co-operation of the teachers was sought and every attempt was made to bring home to parents the risks of the disease and the possibilities of protection afforded by immunisation. A gratifying response was obtained almost immediately, and within a few days 315 written consents were received out of an average attendance of approximately 800 children. Later, similarly successful results were achieved in the case of an outbreak of diphtheria in the Seedley Council School.

The conclusion to be drawn from these experiences was that, at the present time at any rate, the large majority of parents in Salford can be awakened to the dangers of diphtheria and the value of immunisation only when their children are immediately threatened by an epidemic. At other times they appear to lapse into a state of complete indifference with which it is difficult to cope ; active hostility can be combated, but the passive state is most difficult to stir into action.

It would appear that for some time it will be necessary to continue educative methods without expecting considerable results. In the course of time it may be hoped that familiarity with the process and its safety will lead parents to accept it as a matter of course. The public immunisation clinics are staffed by the Public Health Department, but it was found impossible to carry out the work required at the Schools with this staff, and the staff of the School Medical Department (with the consent of the Education Committee) was called upon, the actual cost of their services being re-charged to the Health Committee.

No account of the year's work in connection with immunisation would be complete without reference to the valuable assistance so willingly given by the teaching staffs in the schools visited.

As an inducement to mothers of young children attending the Maternity and Child Welfare Centres to allow their children to be protected, special sessions for immunisation purposes only were initiated at the Langworthy Road and Irlams o' th' Height Maternity and Child Welfare Centres in June and November, 1932, respectively. While the response to this particular effort has not been great, it has served to keep the subject before the minds of the mothers and is keeping in being machinery for coping with the larger numbers which may be expected to attend later.

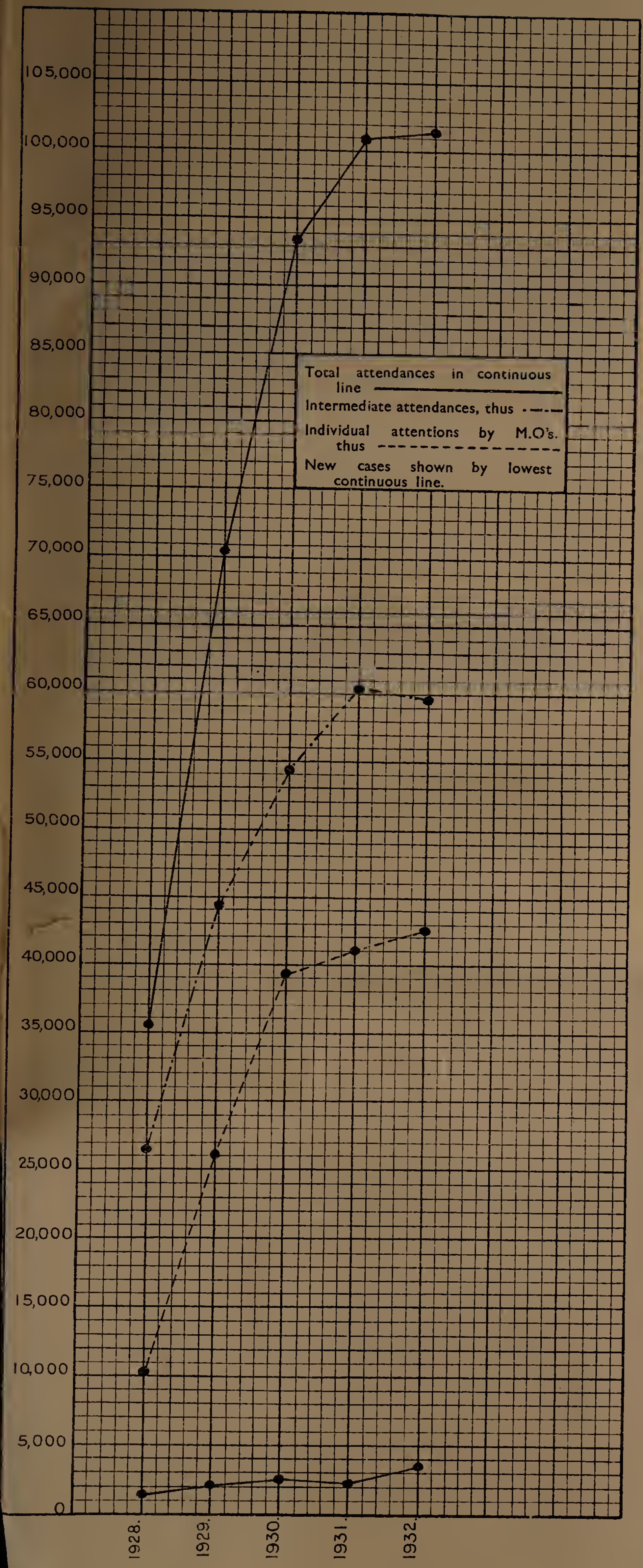
Figures relating to the year's work are appended :—

	No. of Persons who completed Course during 1932.
Regent Road and Teneriffe Street Public Clinics	249
Schools	83
Langworthy Road Maternity and Child Welfare Centre	36
Ladywell Sanatorium :—	
Patients	96
Staff	24
Total	488

In addition, of course, a large number of persons, including more than six hundred schoolchildren, had commenced but had not completed the course by the end of the year.

The total number of attendances at the various Clinics and Schools during the year was 5,818.

GRAPH Nº I.



105,000
100,000
95,000
90,000
85,000
80,000
75,000
70,000
65,000
60,000
55,000
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1928.
1929.
1930.
1931.
1932.
Total attendances in continuous line
Intermediate attendances, thus
Individual attentions by M.O's. thus
New cases shown by lowest continuous line.

SECTION III. (*a*).

Venereal Diseases Scheme.

ANNUAL REPORT, 1932.

Although the fifth birthday of the Municipal Clinic does not fall to be celebrated until the 1st of April, 1933, it is rather desirable to make this Annual Report a survey of the first five years of the Clinic's working. It is proposed, therefore, to review the period from several angles.

Site of Clinic.

It will probably be recalled that when in 1927 it was decided to remove the Treatment Centre from hospital premises and to establish it in the general Public Health building, it was prophesied by some that the effect of this would be to deter patients from attending. The Clinic has now been established at 155, Regent Road—an extremely busy and therefore public thoroughfare—for five years, and during that time the falsity of the prophets has been already demonstrated. The fact is that a V.D. Centre is the more successfully concealed the less pains there are taken to conceal it. The best publicity for the patient is secured by putting the Treatment Centre down a back street or in hospital premises. The figures speak for themselves.

TABLE I.

Year.	Site of Clinic.	New Cases.	Total Attendances.
1919	Salford Royal Hospital.	1,005	11,263
1920		932	18,089
1921		1,144	19,967
1922		1,053	13,644
1923		1,037	13,461
1924		547	15,300
1925		493	15,714
1926		469	15,157
1927		478	15,569
Average for nine	years at Salford Royal. . .	795	15,351
1928	Municipal Clinic.	1,220	35,503
1929		1,928	70,606
1930		2,341	92,954
1931		2,236	100,922
1932		2,118	101,466
Average for five	years at Regent Road . . .	1,968	80,290

In other words, the new cases have increased 145 per cent. and there has been a rise in the total attendance of 423 per cent.

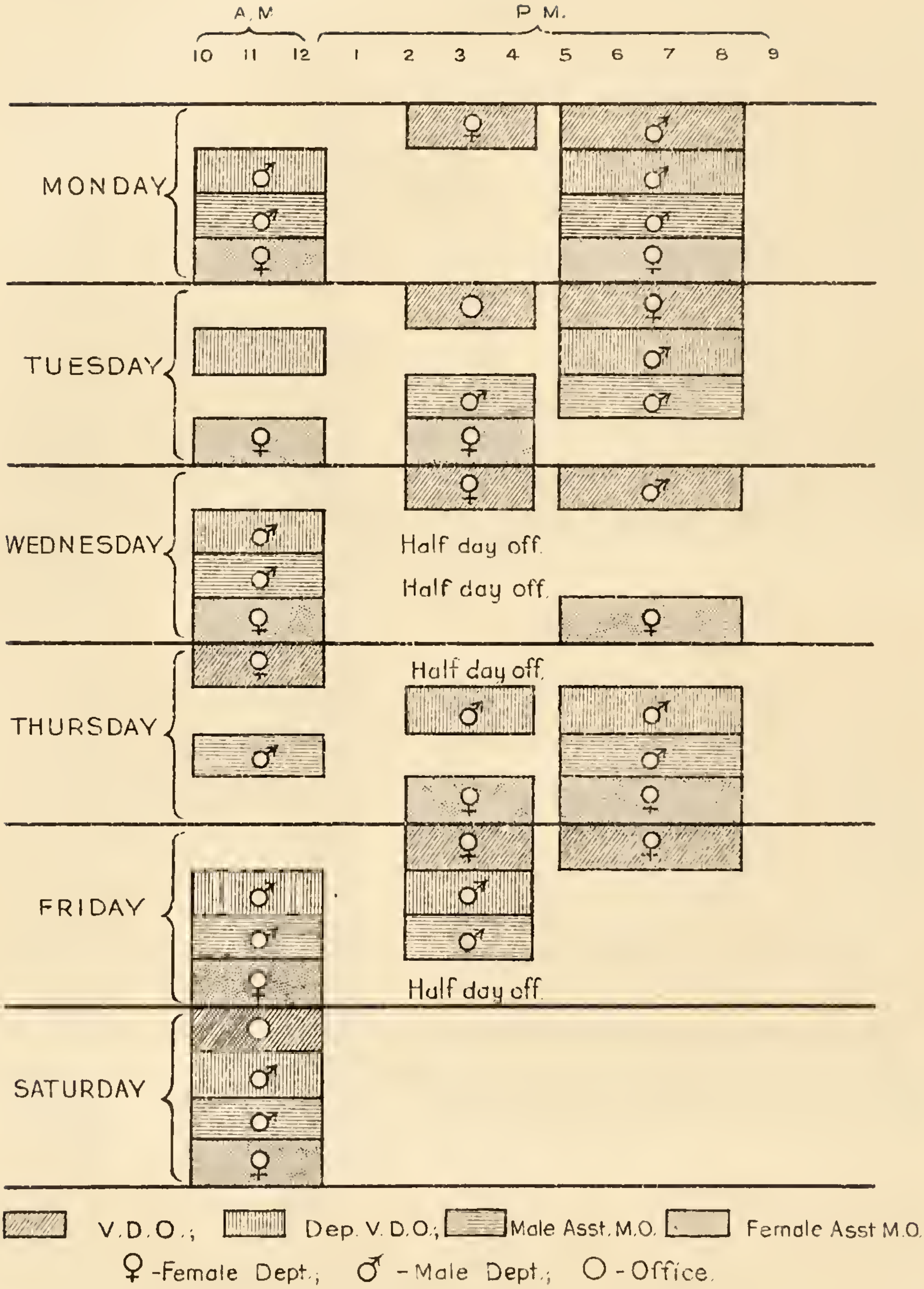
Premises.

Upon the whole, the premises are very suitable for the work. There is a certain amount of congestion at times in the Female Department on the first floor. This could be overcome, and greater space secured, by transferring the six male beds on the second floor to Hope Hospital and removing the Medical Officer's room on the first floor to one of the Wards. The present Medical Officer's room could then be utilised for injection cubicles for the Female Department. During the past five years a good many alterations have been carried out in respect of the internal structural arrangements. Such have been: alterations in and extension of basement cubicles for irrigation; increasing size of dispensary; extension of office and dividing it into two; increasing of cubicle accommodation in the Female Department. All these have been necessary on account of increased work, and the new arrangements have functioned satisfactorily. The alterations on the ground floor in the Male Department have caused the original waiting-room accommodation to be curtailed considerably: but this is compensated for by the fact that, owing to the rearrangements, the work is speeded up very considerably, and, as a consequence, patients wait a shorter time before they are dealt with. Except upon their first visit, patients only exceptionally spend more than twenty minutes in the building.

Experience has shown that while it is necessary that there should be some three beds available for emergency cases and for patients who must remain for a few hours after having had a lumbar puncture performed, it is an exceedingly difficult, unsatisfactory, and expensive arrangement to have an actual Hospital at the Clinic. When in-patients are accommodated at Regent Road, it means depleting the staff available for out-patient work in order to attend to them; it involves the use of a night orderly whose services cannot well be spared from the day work; and it causes a good deal of extra work and expense in the purchase, preparation, and serving of meals. The Hospital worked tolerably well during 1928, 1929, and 1930, when the number of staff was adequate to both in-patients and out-patient work. Since then, however, although a night orderly was obtained, the staff is no longer able to tackle both in-patients and out-patients really efficiently. For these reasons, then, it is very desirable that the in-patient accommodation for men be transferred to Hope Hospital, as happened to the female beds in 1931.

Staff.

When the Clinic opened in 1928 the Staff consisted of the Venereal Diseases Officer, one Clerk-Dispenser, two Orderlies, and one Sister. An additional Nurse was appointed within a month; and within six months so greatly had the work increased that a Deputy Venereal Diseases Officer


A.M.
P.M.
10
11
12
1
2
3
4
5
6
7
8
9
MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
Half day off.
Half day off.
Half day off.
Half day off.
V.D.O.;
Dep. V.D.O.;
Male Asst. M.O.
Female Asst M.O.
♀ -Female Dept.;
♂ - Male Dept.;
O - Office.

was found necessary. At the end of 1932 the staff consisted of the following :—

V.D. Officer (E. T. Burke, D.S.O., M.B.)	M.O.'s	4
Deputy V.D. Officer (R. Marinkovitch, M.D., Ch.B.)...		
Female Assistant M.O. (F. M. Blades, M.B., Ch.B.) ...		
Temp. Male Assistant M.O. (W. E. Orchard, M.B., Ch.B.)		
Clerk-Dispenser (C. W. Flavell)	Clerical	2
Clerk (S. N. Newton)		
Senior Orderly (H. Ireland)	Orderlies	6
Orderly I. (A. Hilton)..................		
,, II. (L. J. Bateman)		
,, III. (D. Blackburn)		
,, IV. (J. H. McCarthy)		
,, V. (J. Hutchinson)		
Sister i/c (J. Norman)	Nurses	3
Nurse I. (B. M. Lennon)...............		
,, II. (M. B. Brown)		
Sister i/c C2X Ward (M. Sellers)	Nurses at C2X Ward	2
Nurse at C2X Ward (G. S. Watkins)		
	Total staff	17

Hours Worked per Week by Clinic Staff (minimum).

4 Medical Officers,	at 28	hours each	112
2 Clerical Staff	at 40	,, ,, ...	80
6 Orderlies	at 46	,, ,, ...	276
3 Nurses	at 46	,, ,, ...	138
		Total	606

The Clinic is open for the treatment of patients for 71½ hours during each week. There is a Medical Officer on duty from 10 a.m. till 8-30 p.m. from Monday to Friday inclusive, and from 10 a.m. to 12-30 p.m. on Saturday. At certain times the whole Medical Staff is present, as will be seen from the time table facing this page.

A large part of the time of Medical Officers is taken up by pathological examinations, such as the performance of the Meinicke test for syphilis, the examination of slides for gonococci, and dark-ground examinations; and also a great many such investigations are carried out by the Sister i/c Female Department, as well as by the Orderlies. Roughly 10,000 serological tests for syphilis are done in a year, and of these 66-2/3rds are done by the Public Health Laboratory and 33-1/3rd by the Clinic staff. The total number of bacteriological *examinations done in a year is 6,350, of which 6,300—or 99 per cent—are carried out by the Clinic, while only 1 per cent are done in the Public Health Laboratory. Of the total pathological work done in respect of the V.D. Scheme, 58 per cent is carried out by the Clinic Staff.

In addition, the Medical Staff has to devote much time to the analysis of cases, to operative work, to the performance of special examinations, and to clerical work.

With the opening of the Female V.D. Ward at Hope Hospital, a very close and mutually advantageous liaison was established between that institution and the Municipal Clinic. The V.D. Officer visits Hope Hospital at least once weekly, and is very frequently called in in a consultative capacity in respect of patients in the general wards.

At present the staff, so far as Medical Officers are concerned, is sufficient for the work involved; so is the Nursing staff. The number of Orderlies, however, requires augmenting on account of one being employed on night work. With the removal of the male beds to Hope Hospital, however, the services of this Orderly will be fully utilised in the Out-Patient Department of the Clinic.

Hope Hospital Ward.

This has proved an inestimable boon to women and children. It was opened on 12th June, 1931, and up till 31st December, 1932, had been occupied by 106 patients, the total number of in-patient days being 3,905. The average duration of a patient's stay in this ward was 36·84 days. The number of beds provided, however, is insufficient to meet the requirements of the Clinic, and the result is that the patients have to be selected for admission. This practically means that only emergency cases can be taken in, and many patients who would avoid an acute illness had they been admitted, have to attend as out-patients, which is, of course, to their detriment.

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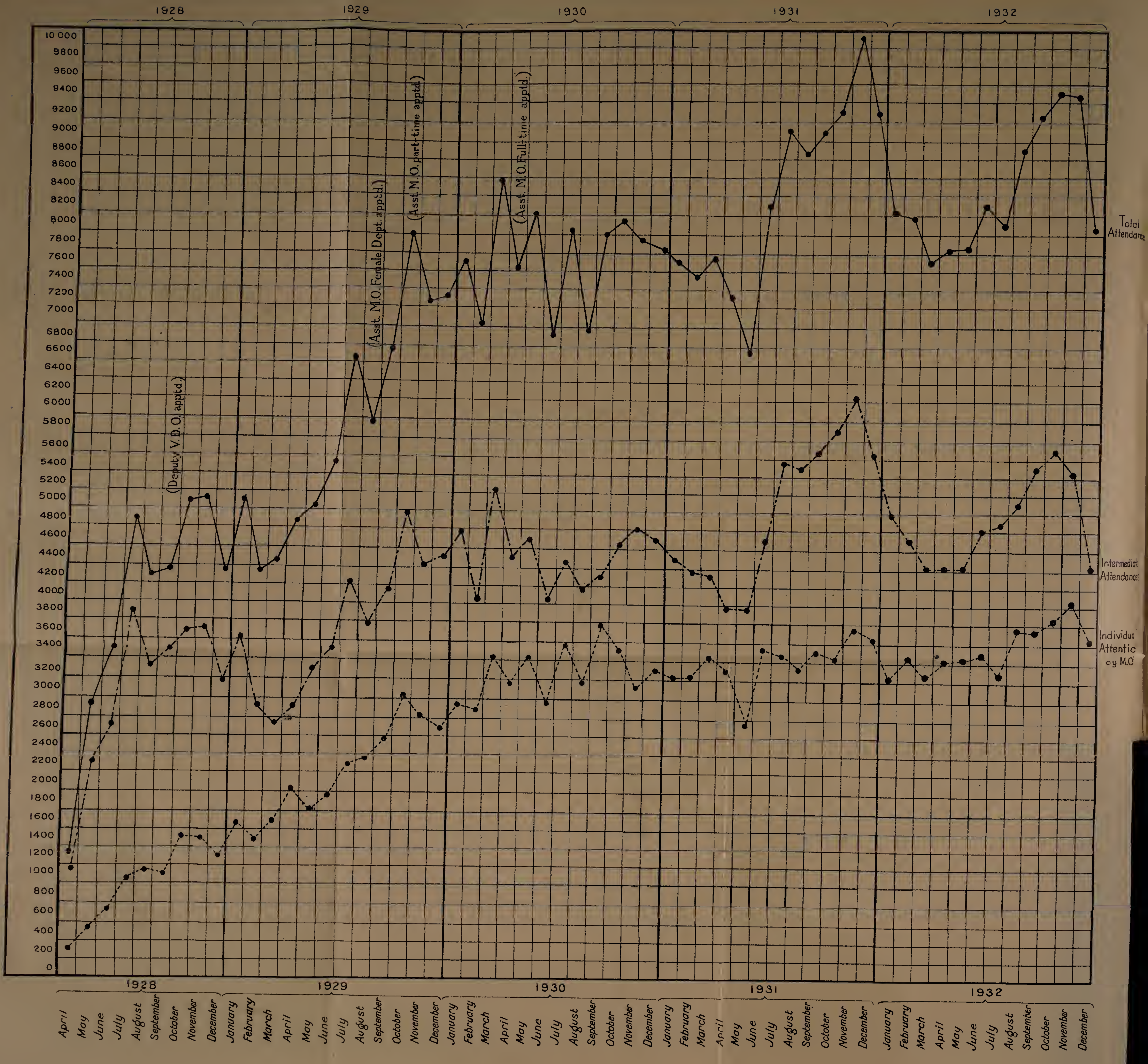
*The average annual number of V.D. slides examined by the Laboratory is 50—that by the Clinic is 6,300 ∴ the Clinic Staff does 99 per cent of the V.D. slide-examination work.

GRAPH No 2


1928
1929
1930
1931
1932
10 000
9800
9600
9400
9200
9000
8800
8600
8400
8200
8000
7800
7600
7400
7200
7000
6800
6600
6400
6200
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
(Deputy V. D. O. apptd.)
(Asst. M.O. Female Dept. apptd.)
(Asst. M.O. part-time apptd.)
(Asst. M.O. Full-time apptd.)
Total Attendanc
Intermediat Attendance
Individua Attentic by M.O
April
May
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July
August
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November
December
January
February
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October
November
December

The provision of at least six male beds at Hope Hospital is a clamant requirement. Even that number is not quite adequate to the Clinic needs; and when it is realised that a great deal of syphilis and gonorrhœa is discovered in the general wards, it seems clear that it would be advantageous for these latter cases to be transferred to special wards under the direct supervision of the Venereal Diseases Officer.

Operative Work.

During the five years' period, the number of operations involving the use of a general anæsthetic was 232. The majority of these were circumcisions and incision of bubos, although other operative procedures, such as Vasotomies, were also done. No urethrotomy for the relief of stricture has been performed. Experience here has shown that all such cases were dilatable with sounds and that no cutting measures were necessary.

In considering the subject of strictures, the experience here fully bears out that of Dr. A. O. Ross, the V.D. Officer for Liverpool, who first drew attention to the matter, that over 50 per cent of old fibrous stricture cases have a positive serology; in other words, they are syphilitic. In the majority of such cases there is a history of gonorrhœa dating back for ten or more years, but no history of syphilis. From the distance of the majority of these strictures from the meatus, it cannot be assumed that the alleged gonorrhœa was really a case of urethral chancre. The most probable explanation seems to be that when the patient acquired gonorrhœa he was also at the same time infected with syphilis. Perhaps owing to local treatment, the primary chancre did not appear in a typical form and so was not diagnosed as such. The later cutaneous signs must also have evaded recognition; and the fibrous stricture is probably best interpreted as being a gummatous infiltration occurring in a *locus minoris resistentia* brought about by trama inflicted upon the urethra by the gonococcus. Whatever may be the explanation, the fact remains that a high proportion of these fibrous strictures are syphilitic, and they only begin to yield to treatment when anti-syphilitic therapy is instituted.

Herein is shown one aspect of the great value of the routine serological test. In the Municipal Clinic such tests are carried out at the first visit of the patient, and again in ten weeks' time.

New Cases.

During the past five years 9,798 patients have been handled. Of these, 44 per cent were suffering from conditions other than venereal. In his review of the Venereal Diseases Scheme for the whole of the country, the Minister of Health states that it is a satisfactory feature of the scheme that a large number of persons who suspect that they may have contracted disease, take advantage of the facilities provided for diagnosis. This, he states, is shown by the increasing number of new cases found not to be suffering from venereal disease. Of the total number of new cases in England and Wales in 1931, 36·43 per cent were found not to be suffering from venereal disease, as compared with 34·39 in 1930, 32·6 in 1929 and 1928, and 31·4 in 1927. With its figuro of 44 per cent then, this aspect is even more satisfactory in the Municipal Clinic than in the rest of England and Wales.

There is, however, involved in this a tremendous fallacy. It consists of the fact that Venereal Diseases are defined as syphilis, gonorrhœa, and soft chancre (chancroid) not only by the Venereal Diseases Regulations of 1916, but also by the Venereal Diseases Act of 1917. Now since there are many other genital disorders, such as balanitis, paraphimosis, and so forth, acquired in exactly the same sexual way as syphilis, gonorrhœa and chancroid, these are all included under the term "conditions other than venereal." Some of these are even more disabling to the individual than the "official" venereal disease. There are thus concealed under that term a large number of cases of disease acquired in a venereal fashion. This matter was alluded to in the Annual Report for 1931 (p. 7 *et seq.*).

Venereal New Cases.

The total number of venereal new cases during the five years amounted to 5,532, consisting of 4,537 men and 995 women. This gives the ratio of women to men as 1 to 4·5. In England and Wales as a whole, the ratio of women to men, new cases attending the V.D. Centres, is as 1 to 2·8.

Contrary to what is found for the country generally, there has been at the Municipal Clinic no appreciable decrease in the number of new cases of either syphilis or gonorrhœa. In fact, compared with the previous five-year period, there has been a tremendous increase. As has been pointed out in previous reports, this does not indicate an increased incidence of such cases in the community, but merely that owing to the excellent facilities provided, patients are attracted to the Municipal Clinic.

There has been a tendency, in view of the decrease in the figures for the whole country, to interpret them as meaning that venereal disease is being conquered. Unfortunately there are other factors which enter into the matter which invalidate such a conclusion.

In Table II the cases are analysed year by year according to sex and disease.

GRAPH No 3.

(Female Dept.)

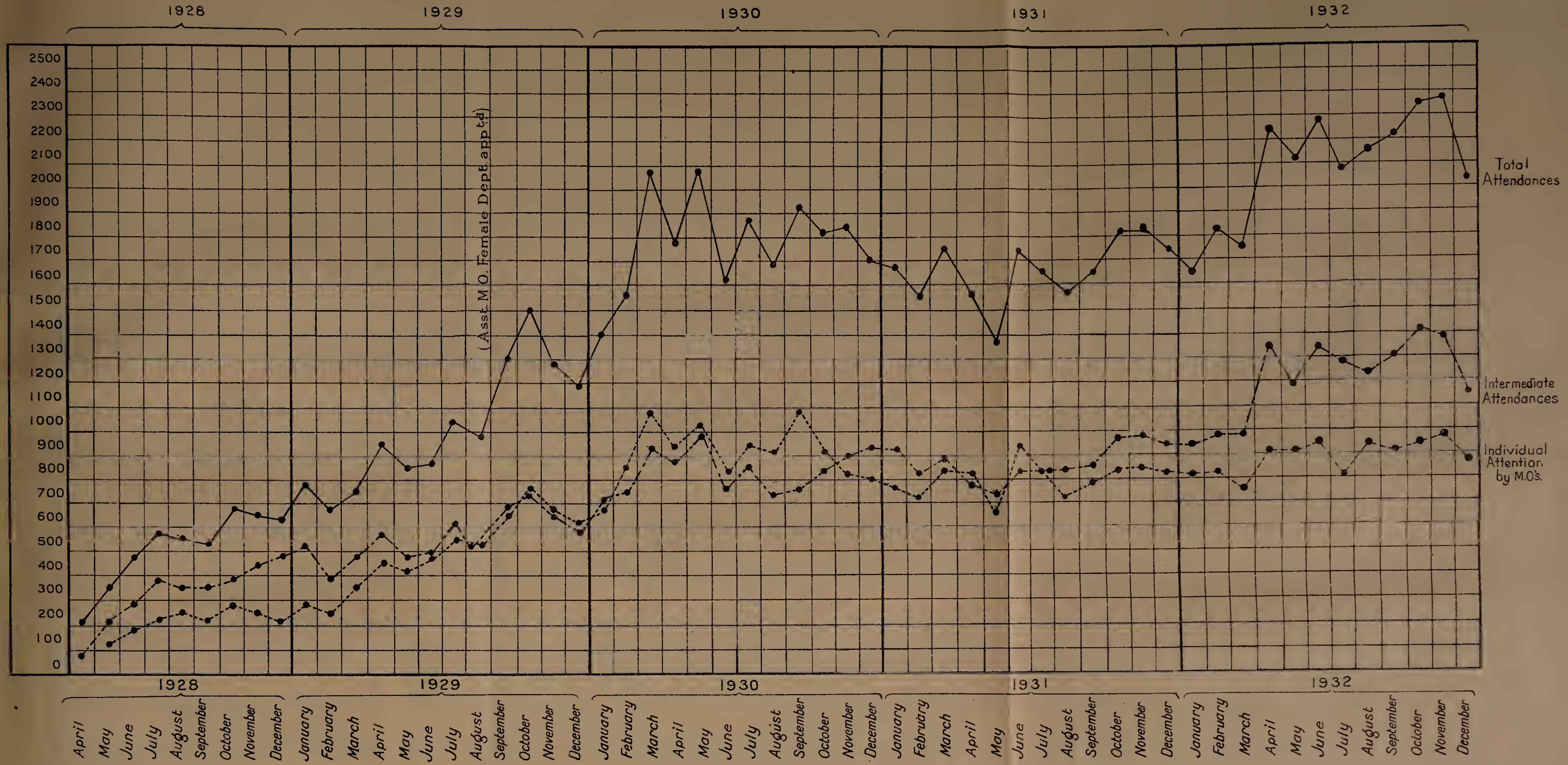


TABLE II.

			Sex.		Totals.				Grand Total.
			Male.	Fem.	M.&F.	V.	N.V.	V.& N.V.	
1928	V.D.	Syphilis	220	46	266	880	..	1,220	9,798
		Gonorrhœa...	526	73	599				
		Chancroid ...	15	..	15				
	Not V.D.	Not V.D.	279	61	340	..	340		
1929	V.D.	Syphilis	317	83	400	1,179	..	1,915	
		Gonorrhœa ..	671	88	759				
		Chancroid ...	20	..	20				
	Not V.D.	Not V.D.	516	220	736	..	736		
1930	V.D.	Syphilis	326	111	437	1,251	..	2,326	
		Gonorrhœa ..	670	124	794				
		Chancroid ...	20	..	20				
	Not V.D.	Not V.D.	779	296	1,075	..	1,075		
931	V.D.	Syphilis	271	121	392	1,112	..	2,183	
		Gonorrhœa ..	631	87	718				
		Chancroid ...	2	..	2				
	Not V.D.	Not V.D.	859	212	1,071	..	1,071		
932	V.D.	Syphilis	303	131	434	1,110	..	2,154	
		Gonorrhœa ..	523	131	654				
		Chancroid ...	22	..	22				
	Not V.D.	Not V.D.	856	188	1,044	..	1,044		
		Totals	7,826	1,972	9,798	5,532	4,266	9,798	

The new cases suffering from venereal diseases who attended during 1932 are analysed in Table III according to sex, disease, and duration of disease :—

TABLE III.

	Disease.	Duration.		Totals.		
		Over one year.	Under one year.			
Males...	Syphilis	119	141	260	759	1,000
	Chancroid	..	22	22		
	Gonorrhœa	11	466	477		
	Total males	130	629	..	..	
Females.	Syphilis.............	84	39	123	241	
	Chancroid	..	..	..		
	Gonorrhœa	15	103	118		
	Total Females	99	142	..	..	
	Grand Total	229	771	..	1,000	

The above figures are exclusive of 36 patients who defaulted in previous years and returned during 1932 with the same infection, and of 74 patients dealt with for the first time during 1932 who were known to have received treatment at other Centres.

The salient feature of this table is the fact that while in both sexes the bulk of gonorrhœa cases come for treatment within the first year of the disease, where syphilis is concerned the majority of the female cases are not diagnosed until after 12 months. This is probably inevitable in syphilis, chiefly owing to the fact that the disease in women does not present the same glaring clinical signs as it does in men.

In Table IV is set out year by year an analysis of the degrees of syphilis in which new cases presented themselves :—

TABLE IV.

	1928.			1929.			1930.			1931.			1932.			Total.		Grand Total.
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	
EARLY.																		
Sero-negative primary.	58	1	59	101	9	110	124	8	132	60	3	63	52	6	58	395	27	422
Sero-positive primary..	37	13	50	47	22	69	47	34	81	40	10	50	61	4	65	232	83	315
Early secondary	9	5	14	26	5	31	18	3	21	19	12	31	8	7	15	80	32	112
Late secondary	..	..	..	..	..	..	..	..	..	13	12	25	27	15	42	40	27	67
Total Early	104	19	123	174	36	210	189	45	234	132	37	169	148	32	180	747	169	916
LATE.																		
Endosyphilis	99	20	119	104	28	132	88	31	119	86	57	143	78	60	138	455	196	651
Tertiary	1	..	1	1	..	1	..	..	..	14	5	19	25	11	36	41	16	57
Neurosyphilis	11	1	12	26	5	31	21	2	26	8	8	16	36	3	39	105	19	124
Congenital	5	6	11	12	14	26	25	33	58	27	18	45	16	25	41	85	96	181
Total Late	116	27	143	143	47	190	137	66	203	135	88	223	155	99	254	686	327	1,013
Grand Total	220	46	266	317	83	400	326	111	437	267	125	392	303	131	434	1,433	496	1.929

It will be seen that of all the syphilis cases seen during the 5-year period, 47 per cent were suffering from the early stage of the disease. Of the 916 early cases it is extremely satisfactory to note that over 80 per cent attended in the chancre stage.

Early male syphilis is very easily curable; in fact, cure can be *guaranteed* provided the patient attends regularly and completes the course prescribed according to schedule.

Routine Treatment for Early Male Syphilis.

Certain routine Standard Courses are in operation at the Municipal Clinic for the treatment of early male syphilis. These courses have been gradually evolved as the result of experience and the careful clinical and serological observation of cases since 1917. The main principles upon which these courses are based were indicated in the Annual Report for 1930; and in that Report it was hoped that by the end of 1931 a full analysis of the records would be ready for publication. Unfortunately, owing both to lack of time and the refusal of a financial grant by the Medical Research Council, this analysis is not yet completed in a state for publication. Nevertheless, owing to the fact that there has been much controversy recently regarding treatment methods, it is considered advisable here to state briefly the main evidence upon which the Municipal Clinic Courses is based.

In Table V is set out the gross material upon which the present method of treatment is built:—

TABLE V.

		Year.	Syphilis.		Totals.			
			Male.	Female.				
WARRINGTON.	Concurrent.	1917	31	22	53	365	673	2,602
		1918	38	29	67			
		1919	59	30	89			
		1920	46	28	74			
		1921	48	34	82			
		Total (1)	222	143				
	Alternating.	1922	52	25	77	308		
		1923	46	28	74			
		1924	41	19	60			
		1925	29	19	48			
		1926	32	17	49			
		Total (2)	200	108				
SALFORD.		1928	220	46	266	1,929		
		1929	317	83	400			
		1930	326	111	437			
		1931	271	121	392			
		1932	303	131	434			
		Total (3)	1,437	492				
Total		(2) & (3)	1,637	600	2,237	Grand Total 2,602		

The end result of the study of the 365 patients treated concurrently at Warrington from 1917 to 1921, was the adoption of the alternating method and, later on, a realisation of the inefficiency of mercury.

Between 1922 and 1926, therapy was administered to 308 patients according to the alternating principle. It was upon the experience derived from these cases that the "Salford Courses," shortly to be described, were worked out. In arriving at them, regard was paid not only to the clinical and serological response but also to the general reaction of the patient towards the remedial agents.

These two series of patients—the 365 treated concurrently and the 308 treated on the alternating system, making 673 in all, may be regarded as the experimental material upon which the therapy from 1928 onwards was based.

As will be seen from Table IV, of the 916 Municipal Clinic cases suffering from early syphilis, 747 were of the male sex; and it is these which are the subject of the forthcoming analysis.

From 1922 to 1924, 211 cases of syphilis attending the Warrington Treatment Centre received alternating series of arsphenamine* intravenously and of mercury in the form of Lambkin's Cream intramuscularly. A few had bismuth in place of mercury; but the newer agent was not taken into routine use till 1924. This "Warrington" Course was as follows:—

TABLE VI.

Agent.	No. of injections per Week.	No. of Weeks.	Dosage.	
			Arsph. gms.	Hg. grains.
Arsphenamine	1	8	4·65	..
Mercury	1	8	..	8
Arsphenamine	1	8	4·65	..
Mercury	1	8	..	8
Total	..	32	9·3	16

*Here the term "arsphenamine" is used in a general sense to indicate one of the trivalent arsenicals without seeking to differentiate them specifically.

When bismuth was taken into routine use, the Course was as follows :—

TABLE VII.

Agent.	No. of Injections per Week.	No. of Weeks.	Dosage.	
			Arsph. gms.	Bi. gms.
Arsphenamine	1	8	4·65	..
Bismuth	2	8	..	3·2
Arsphenamine	1	8	4·65	..
Bismuth	2	8	..	3·2
Total	..	32	9·30	6·4

Various bismuth preparations were used, but eventually a metallic suspension of the metal in isotonic glucose was taken into routine use.

From these " Warrington " Courses there was gradually evolved the " Salford " Courses.

From 1st April, 1928, to 31st December, 1930, the " Salford (Old) Course " was in operation ; and from 1st January, 1931, to 31st December, 1933, the " Salford (New) Course " was adopted. On 1st January, 1934, the " Salford (Revised) Course " will become routine. These are set out below in tabular form.

SALFORD (OLD) COURSES. (1928–1930).

Course and Degree of Disease.	Agent.	No. of Injections per Week.	No. of Weeks.	Grams.		T.U.	E.I.
				Arsph.	Bi.		
COURSE I. 1st Degree or Sero-negative Primary Syphilis.	Arsphenamine	1	6	3·45	..	6	
	Bismuth	2	4	..	1·6	2	
	Arsphenamine	1	6	3·45	..	6	
	Bismuth	2	4	..	1·6	2	
	Arsphenamine	1	4	2·40	..	4	
	Total	..	24	9·25	3·2	20	83·3
COURSE II. 2nd Degree or Sero-positive Primary Syphilis.	Arsphenamine	1	8	4·65	..	8	
	Bismuth	2	8	..	3·2	4	
	Arsphenamine	1	8	4·65	..	8	
	Bismuth	2	8	..	3·2	4	
	Total	..	32	9·30	6·4	24	75·0
COURSE III. 3rd Degree or Early Secondary Syphilis.	Arsphenamine	1	8	4·65	..	8	
	Bismuth	2	6	..	2·4	3	
	Arsphenamine	1	8	4·65	..	8	
	Bismuth	2	6	..	2·4	3	
	Arsphenamine	1	6	3·45	..	6	
	Bismuth	2	4	..	1·6	2	
	Total	..	38	12·75	6·4	30	79·0
COURSE IV. 4th Degree or Late Secondary Syphilis.	Arsphenamine	1	8	4·65	..	8	
	Bismuth	2	8	..	3·2	4	
	Arsphenamine	1	8	4·65	..	8	
	Bismuth	2	8	..	3·2	4	
	Arsphenamine	1	8	4·65	..	8	
	Bismuth	2	8	..	3·2	4	
	Total	..	40	14·05	9·6	36	90·0

It will be seen from the above that Course II. is practically the original "Warrington" Course. Experience showed that this could be reduced for 1st Degree Syphilis, but that it was not quite good enough to give a relapse-rate of *nil* in syphilis of the 3rd and 4th Degrees. For these last two, it was therefore modified into Courses III and IV of the above Table.

The number of male cases treated on the above standards, all suffering from early syphilis, was 467.

It was during this time that the principle of the Therapeutic Unit (T.U.) value for the agents, and of the Efficiency Index (E.I.) for the Course, was worked out and tested. After it was found that in order to get a cure-rate of 100 per cent—or, in other words, a relapse-rate of *nil*—the E.I. must not be less than 70, it became clear that in order to allow a reasonable amount of latitude for irregular attendance, the Courses must be lengthened in duration, and for the indices of the fully completed schedules must be raised. This was done in the "Salford (New) Courses," shown below :—

SALFORD (NEW) COURSES (1931–1933).

Course and Degree of Disease.	Agent.	No. of Injections per Week.	No. of Weeks.	Grams.		T.U.	E.I.
				Arsph.	Bi.		
COURSE I. 1st Degree or Sero-negative Primary Syphilis.	Stabilarsan	1	6	3·45	..	6	
	Bivatol	2	4	..	0·64	3	
	Stabilarsan	1	6	3·45	..	6	
	Bivatol	2	4	..	0·64	3	
	Stabilarsan	1	6	3·45	..	6	
	Total	..	26	10·35	1·28	24	92
COURSE II. 2nd Degree or Sero-positive Primary Syphilis.	Stabilarsan	1	8	4·65	..	8	
	Bivatol	2	6	..	0·96	4·5	
	Stabilarsan	1	8	4·65	..	8	
	Bivatol	2	6	..	0·96	4·5	
	Stabilarsan	1	6	3·45	..	6	
	Total	..	34	12·75	1·92	31	91
COURSE III. 3rd Degree or Early Secondary Syphilis.	Stabilarsan	1	8	4·65	..	8	
	Bivatol	2	6	..	0·96	4·5	
	Stabilarsan	1	8	4·65	..	8	
	Bivatol	2	6	..	0·96	4·5	
	Stabilarsan	1	8	4·65	..	8	
	Bivatol	2	4	..	0·64	3	
	Total	..	40	13·95	2·56	36	90
COURSE IV. 4th Degree or Late Secondary Syphilis.	Stabilarsan	1	10	5·85	..	10	
	Bivatol	2	6	..	0·96	4·5	
	Stabilarsan	1	10	5·85	..	10	
	Bivatol	2	6	..	0·96	4·5	
	Stabilarsan	1	10	5·85	..	10	
	Bivatol	2	6	..	0·96	4·5	
	Total	..	48	17·55	2·88	43·5	90

As is indicated in the above table, it was found that the safest and most potent agents were Stabilarsan and a lipo-soluble bismuth preparation named Bivatol. During 1931 and 1932, while the above Courses were in operation, 280 male cases of early syphilis were so treated.

In comparing this with the previous Table, it will be seen that the Courses are slightly longer and the Efficiency Indices considerably higher. This gives a greater margin of safety above the index-figure of 70, which is the lower limit of adequacy.

The Salford (Revised) Courses are appended below :—

SALFORD (REVISED) COURSES (1934).

Course and Degree of Disease.	Agent.	No. of Injections per Week.	No. of Weeks.	Grams.		T.U.	E.I.
				Arsph.	Bi.		
COURSE I. 1st Degree or Sero-negative primary Syphilis.	Stabilarsan	3	13	13·0	..	13	
	Lipo-soluble Bi.	1 or 2	4	..	0·4	3	
	Stabilarsan	3	5	5·0	..	5	
	Lipo-soluble Bi..	1 or 2	4	..	0·4	3	
	Total	..	26	18·0	0·8	24	92
COURSE II. 2nd Degree or Sero-positive primary syphilis.	Stabilarsan	3	13	13·0	..	15	
	Lipo-soluble Bi..	1 or 2	4	..	0·4	3	
	Stabilarsan	3	8	8·0	..	8	
	Lipo-soluble Bi.	1 or 2	4	..	0·4	3	
	Stabilarsan	3	5	5·0	..	5	
	Total	..	34	26·0	0·8	32	91
COURSE III. 3rd Degree or Early Secondary Syphilis.	Stabilarsan	3	13	13·0	..	13	
	Lipo-soluble Bi..	1 or 2	4	..	0·4	3	
	Stabilarsan	3	8	8·0	..	8	
	Lipo-soluble Bi..	1 or 2	4	..	0·4	3	
	Stabilarsan	3	6	6·0	..	6	
	Lipo-soluble Bi..	1 or 2	5	..	0·5	3·75	
	Total	..	40	27·0	1·3	36·75	91
COURSE IV. 4th Degree or Late Secondary Syphilis.	Stabilarsan	3	13	13·0	..	13	
	Lipo-soluble Bi..	1 or 2	4	..	0·4	3	
	Stabilarsan	3	10	10·0	..	10	
	Lipo-soluble Bi..	1 or 2	5	..	0·5	3·75	
	Stabilarsan	3	10	10·0	..	10	
	Lipo-solubli Bi..	1 or 2	6	..	0·6	4·5	
	Total	..	48	33·0	1·5	44·25	92

In the above, the Bismuth is calculated in terms of Stabismol, taking as the minimum effective therapeutic dose 0·1 gram of the metal in a 7-day period. The Stabilarsan dose is the average one for a normal male adult—i.e., 1·0 gram every seven days given in three doses of 0·45 gram, 0·3 gram, and 0·25 gram.

In the following Table a comparison is made among the three Courses, in terms of quantity of agent, duration of Courses, Therapeutic Units, and Efficiency Indices. " O," " N," and " R " stand for " Old," " New," and " Revised " Courses respectively.

TABLE VIII.

Course.	Duration in Weeks.			Arsphenamine.						Bismuth.						Total T.U.			Efficiency Index.		
				Grams.			T.U.			Grams.			T.U.								
	O.	N.	R.	O.	N.	R.	O.	N.	R.	O.	N.	R.	O.	N.	R.	O.	N.	R.	O.	N.	R.
I.	24	26	26	9·25	10·35	18·0	16	18	18	3·2	1·28	0·8	4	6	6	20	24	24	83·3	92	92
II.	32	34	34	9·30	12·75	26·0	16	22	26	6·4	1·92	0·8	8	9	6	24	31	32	75	91	91
III.	38	40	40	12·75	13·95	27·0	22	24	27	6·4	2·56	1·3	8	12	9·75	30	36	36·75	79	90	91
IV.	40	48	48	14·05	17·55	33·0	24	30	33	9·6	2·88	1·5	12	13·5	11·25	36	43·5	44·25	90	90	92

It will be seen that in the "New" and "Revised" Courses, although very much less bismuth metal is employed than before, each bismuth series has a much higher T.U. value than in the "Old" Course. This is due to a lipo-soluble preparation being used, in which, although the metal-content per c.c. is lower than in other preparations—e.g., metallic suspensions in glucose—there is a higher chemotherapeutic index. In other words, there is a greater "usability" of the metal. It is not yet generally realised that, although a bismuth preparation must contain a certain amount of the element before it can be therapeutically potent, that potency bears no direct relationship to the amount of metal present. In a compound with a high metallic content, the greater proportion of the element may be therapeutically inert, although capable of causing toxic symptoms.

The method of calculating therapy which is adopted in the Municipal Clinic and which was evolved there, is not, at first sight, simple—especially to those who are unfamiliar with the meaning, the principles, and methods of chemotherapy. It may, however, be summarised as follows:—

(1) The various remedial agents are allotted a Therapeutic Unit value for each optimum dose administered in a 7-day period. These are set out in Column 3 in Table IX, and are based upon (*a*) the chemotherapeutic index (C.T.I.) as worked out upon the experimental rabbit; and (*b*) clinical and serological response in the human subject.

TABLE IX.

Agents.	(1) C.T.I.	(2) Efficiency Scale.	(3) Therapeutic Unit Value (T.U.).
"914," Stabilarsan, Myosalvarsan, Neo-Silversald	16	100	1·00
Lipo-Soluble Bi. (Bivatol, Stabismol, Bismo-Cymol)	12	75	0·75
Bismogenol	9	56	0·56
Water-Soluble Bismuth Salts	8	50	0·50
Metallic Suspensions of Bi.	8	50	0·50
Tryparsamide, Stovarsol	5	31	0·31
Mercury	1	6	0·06

In reckoning therapy, any dose of any agent which gives in a 7-day period a lower T.U. value than 0·5 is, in early syphilis, to be reckoned as *nil*.

(2) For arsphenamine the optimum dose for a 7-day period is ascertained for each individual patient. For the average normal adult this is 0·6 gram when given as one injection, 0·9 gram when given as two injections of 0·45 gram each, and 1·0 gram in three doses of 0·45, 0·3, and 0·25 gram: Either of these is reckoned as 1 T.U. Experience has shown that the twice-weekly administration of this agent is safer and more efficient than when it is given only once a week, and thrice weekly is better still. The optimum doses of certain agents in a 7-day period are as follows:—

Agent.	Once weekly.	Twice weekly.	Thrice weekly.	T.U.
Arsphenamine	0·6	0·9	1·0	1·0
Bivatol	0·16	0·16	..	0·75
Stabismol	0·10	0·10	..	0·75
Bismogenol	0·12	0·12	..	0·56
Hypoloid Bismuth	0·4	0·4	..	0·50
Bismostab	0·4	0·4	..	0·50

The doses given for the bismuth preparations are the lowest which are therapeutically efficient; but they may be considerably increased in many cases without causing toxic symptoms. There does not seem, however, any necessity for this. Any dose of a bismuth preparation which is less than that shown above reckons as *nil* T.U. for an adult.

(3) The Efficiency Index of the Course is calculated as the number of T.U. given, multiplied by 100, and divided by not less than the number of weeks of the scheduled course. The denomination of the E.I. fraction must never be less than this number of weeks. If, however, owing to absences, the requisite amount of therapy has required longer than the scheduled time, that greater number of weeks is the denominator.

(4) In order to use the method correctly, whenever the scheduled number of weeks has been reached, the E.I. must then be worked out. If this falls below 70, a simple calculation will show whether or not it can be raised to that figure by concurrent therapy during an additional period not exceeding four weeks. If it can, then that procedure is adopted; after which tests for cure are begun. If a figure of 70 cannot be reached in such a way, then the case must be regarded as being inadequately treated—as being now a case of *late* syphilis, and Course V must be begun.

(5) The only satisfactory way in which to record therapy is by the use of the "space-for-time" principle used by Sir Jonathan Hutchinson, and adopted in the Municipal Clinic.

(6) Based upon this method of reckoning therapy, it has been found on an analysis of 747 male cases of early syphilis, that a relapse rate of *nil*, or a cure-rate of 100 per cent, is obtained whenever the E.I. of a Course is 70 or over, the duration of such Course being from 26 to 48 weeks, according to the degree of the disease when therapy is on the alternating method; and between 61 and 80 weeks when the concurrent system is adopted.

The very practical point of all this is that only by this method is it possible to tell whether or not the patient has been adequately treated, no matter whether the therapy has been concurrent or alternating. If the E.I. is over 70, treatment is adequate; if it is under 70 it is inadequate. Adequate treatment means that the patient will suffer no clinical or serological relapse in the future, and that he will not transfer the disease either to his marital partner or to their offspring.

The ingenuity of the human mind can, no doubt, propound several plausible theoretical objections to this plain and practical method. But all these objections fail, for the simple reason that the method has successfully passed through the fire of experience. It works accurately, and in every instance. Of course, there are many male patients who are cured, who completely fulfil the cure-criteria, the E.I. of whose treatment is below 70; but the important point is that *every* male patient whose index is over 70 passes the cure standard; whereas a certain proportion of those below that figure will relapse—*and there is no means of identifying those latter until the relapse occurs.*

Assessment of Value of Remedial Agents.

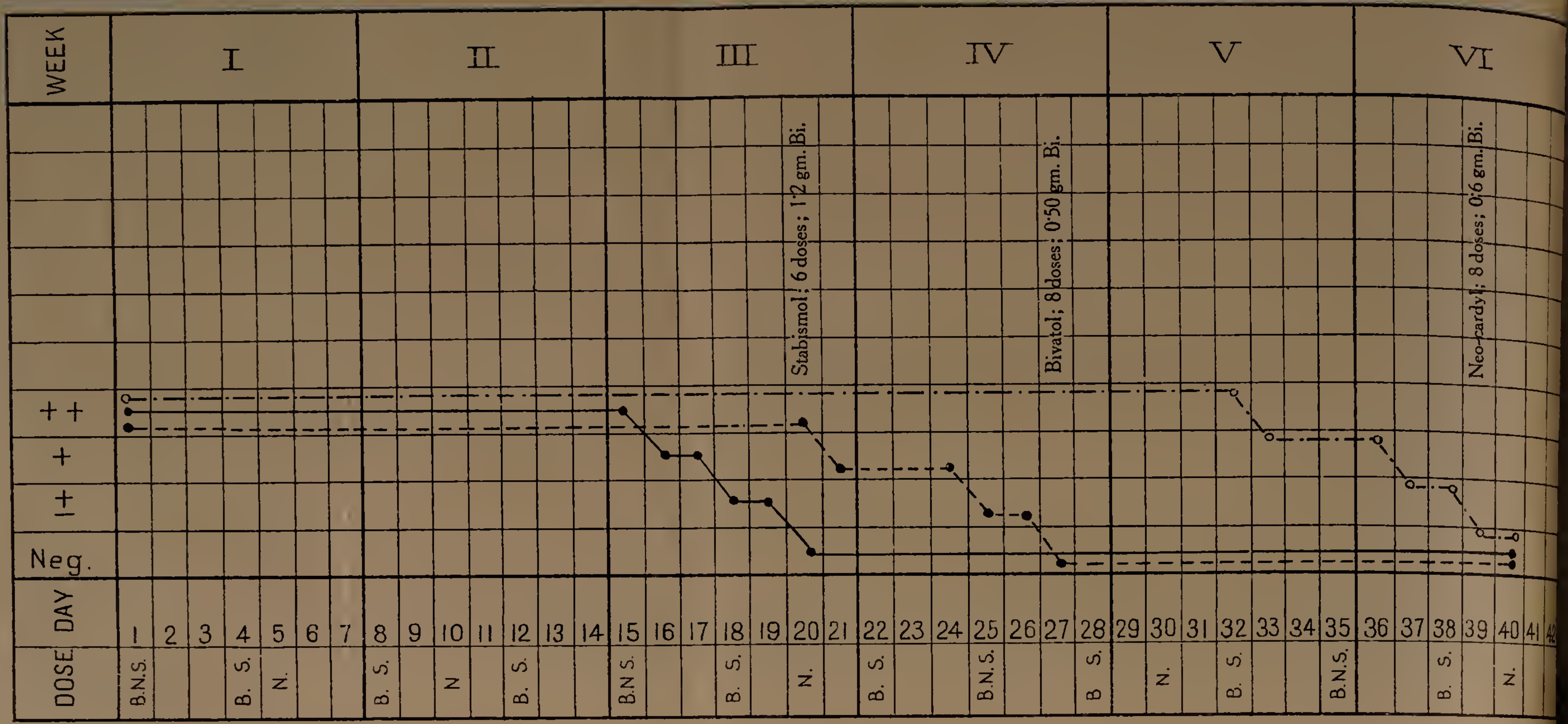
During the past five years a certain amount of work has been done in respect of assessing, by clinical and serological means, the value of the different preparations used in the treatment of syphilis.

The principle adopted is to test the various agents upon :—

(*a*) cases of sero-negative primary syphilis in regard to rapidity with which parasites disappear and chancre heals; and

(*b*) cases of sero-positive primary or early secondary syphilis in regard to the rapidity with which the positive serology becomes negative.

For example, if a preparation " X " is being tested, this is given to a series of patients suffering from sero-negative primary (1st Degree) syphilis. These patients are seen daily, and at each visit a search is made in the chancre for the presence of treponemata. At the same time a note is made



CHART

SERO-POSITIVE PRIMARY SYPHILIS. SEROLOGICAL (WASSERMANN) RESPONSE.

Bivatol is shown as – – – – – –; Neo-Cardyl as –·–·–·–·–; Stabismol as ————
The letters "B," "N," and "S" in the space marked "Dose" indicate injections of Bivatol, Neo-Cardyl, and Stabismol respectively. The day on which the lines end, indicates the day on which the Chancre was healed.

as to the healing of the lesion ; and once every week a serological test is done. The results are charted for each case in the series, day by day ; and from these individual charts, an "averaged chart" is constructed which gives a fair graphic representation of the influence of the agent "X" in causing disappearance of parasites and the healing of lesions in 1st degree syphilis.

The same is done in a series of sero-positive cases in which the criterion of efficacy is the rapidity with which the serology is reversed.

When various agents are thus charted and an averaged-chart made for each, one can very easily be compared with another and a very accurate estimate made as to their respective *immediate* therapeutic effects. This method of comparison is of much more value than estimating therapeutic response merely from "general impressions." It is to be noted, however, that it only gives an indication of the *immediate* effects. It might well be that a certain agent would clear up surface lesions with extraordinary rapidity, but that it could not be used more than a very few weeks on account of toxic symptoms developing in the patient. Assessed by this method, then, its value in syphilis as a whole would be more apparent than real. Indeed, this is just exactly the position with respect to Salvarsan ("606") when compared with neo-salvarsan ("914"). Hence it is that in order to get a true picture of the real therapeutic position of any agent in the treatment of syphilis, there requires, in addition to the immediate clinical and serological response in early syphilis, also to be taken into account the matter of the tolerance of the patient to the prolonged administration of the drug. Hence it is that the method just described must be supplemented by a consideration of the chemotherapeutic index as worked out upon the experimental animal. And it has been shown that this latter is the sounder method of the two, although the clinical and serological immediate assessment is useful and easily applied.

The chart facing this page shows the comparison between these Bismuth compounds in sero-positive primary syphilis.

Similar charts have been constructed for many other agents and these have been found extremely useful. Occasionally, manufacturers send samples of a new preparation, with a request for a report upon it. By the method just described, any such new agent can rapidly and accurately be compared with others ; and, if it is found of less value than those in routine use, it can promptly be discarded, thus preventing patients being treated with an inferior drug.

Many preparations for the treatment of syphilis—and gonorrhœa also—are put upon the market accompanied at times by quite unjustifiable claims made for them by their manufacturers. The validity of such claims can, by the method adopted here, be very quickly put to the test. So far as arsphenamines are concerned, the position is perfectly satisfactory, because these require to have the approval of the Ministry of Health, and that is based upon careful tests carried out by the Medical Research Council. There is at present no such control exercised over bismuth preparations, and the result is that the market is flooded with innumerable products containing bismuth, which are too often of little or no therapeutic value.

It is suggested that no bismuth preparation should be approved for use in a Treatment Centre under the V.D. Scheme of the Ministry of Health, until such time as its chemotherapeutic index has been worked out upon rabbit syphilis and shown to be satisfactory. In addition, careful clinical and serological testing should have been carried out to demonstrate its immediate value in the healing of surface lesions and in the destruction of the parasites.

Jaundice.

During the past three years, Dr. R. Marinkovitch (Deputy V.D. Officer) has been engaged in an investigation into the incidence, etiology, treatment, and prognosis of jaundice occurring among patients attending the Municipal Clinic in the 5-year period from 1928 to 1932. This inquiry—which was referred to in the Annual Report for 1930—has proved to be a much more laborious undertaking than was at first thought. Dr. Marinkovitch has carried this through single-handed, and the Report should be published in the near future.

Dermatitis.

A similar inquiry into dermatitis is also being carried out.

Female Syphilis.

Material is gradually being accumulated with respect to female syphilis which will eventually be investigated in connection with the influence of puberty, the reproductive period, pregnancy, and the menopause, upon the course, treatment, and prognosis of syphilis.

Comparative Statement as to Cost and Work Done.

There is set out below a statement showing the increase and decrease—actual and percentage—in respect of various items involving the question of cost, relative to the Centre when it was at Salford Royal Hospital and at the present time.

STATEMENT AS TO COST AND WORK DONE.

	1927. Salford Royal.	1932. Clinic.	Actual.		Percentage.	
			Increase.	Decrease.	Increase.	Decrease.
Gross cost	£3,095	£10,742	£7,647	—	247	—
Number of Patients	1,019	5,496	2,477	—	243	—
Cost per patient per year	£3·04	£3·07	£·03	—	·98	—
Total attendances	15,569	100,466	84,897	—	545	—
Cost per attendance	3·9s.	2·1s.	—	1·8s.	—	46
Net cost	£2,134	£5,381	£3,247	—	152	—
Number of Salford patients	308	913	605	—	196	—
Cost per Salford patient per year.	£6·9	£5·9	—	£1·0	—	14·5
Number of Salford attendances	10,049	46,670	36,621	—	364	—
Cost per Salford attendance	4·2s.	2·3s.	—	1·9s.	—	45
Percentage cure-rate	9·6	41·7	32·1	—	334	—
*Percentage defaulter-rate	26·8	1·2	—	25·6	—	96 (—)
Average number of attendances per patient	15·3	28·7	13·4	—	87	—
Average number of attendances per Salford patient	32·6	51·1	18·5	—	57	—
Days in Hospital (Salford)	449	2,310	1,861	—	414	—
Days in Hospital (Other areas)	174	1,122	948	—	545	—
Wassermans	318	3,736	3,418	—	1,075	—
Kahn tests	—	2,127	2,127	—	—	—
Meinicke tests	—	2,064	2,064	—	—	—
Treponemata	—	372	372	—	—	—
.V. injections	1,429	10,110	8,681	—	607	—
M.O. treat	6,441	42,485	36,044	—	559	—
Intermediate	3,608	58,981	55,373	—	1,535	—
Average number of times patient treated by M.O.	6·3	12·1	5·8	—	92	—

*Dangerous Defaulters. Item 10 on Form V.D. (R) (revised).

From the above it will be seen that there has been a marked and all-round increase in efficiency, with an equally marked decrease in comparative cost.

The following table gives an analysis of all the patients dealt with during 1932 :—

TABLE X.

PATIENTS DEALT WITH DURING 1932.

Description.	Venereal.			Non-venereal.			Total, all cases.		Grand Total.
	M.	F.	Total	M.	F.	Total	M.	F.	
Patients remaining on 1st January, 1932, from previous years......	894	247	1,141	173	28	201	1,067	275	1,342
New cases (including returned defaultors prior to 1931)	848	262	1,110	856	188	1,044	1,704	450	2,154
Totals	1,742	509	2,251	1,029	216	1,245	2,771	725	3,496

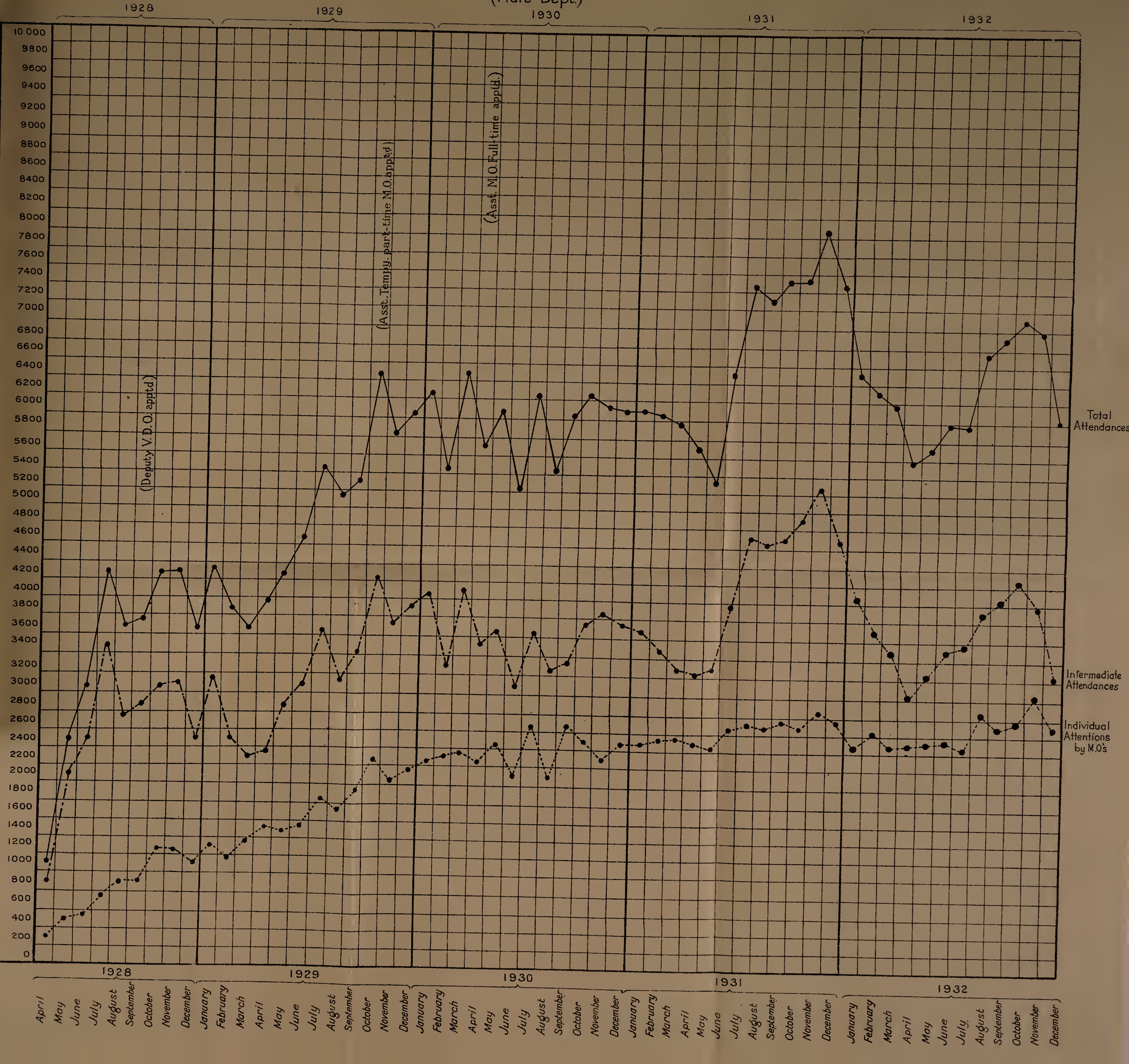
In Table XI are shown how patients were disposed of during the year.

TABLE XI.

PATIENTS DISPOSED OF DURING 1932.

Mode of Disposal.	Venereal.			Non-venereal.			Total, all cases.		Grand Total.
	M.	F.	Total	M.	F.	Total	M.	F.	
Cured	410	44	454	820	183	1,003	1.230	227	1,457
Defaulted before completing treatment	194	96	290	..	..	..	194	96	290
Defaulted before completing tests for cure	103	15	118	..	..	..	103	15	118
Transferred to other centres	160	14	174	..	..	..	160	14	174
Total	867	169	1,036	829	183	1,003	1,687	352	2,039

GRAPH No 4.
(Male Dept.)



The patients remaining on the books at the end of 1932 are shown below :—

TABLE XII.

Patients remaining on 31st December, 1932.

Venereal.			Non-venereal.			Total, all cases.		Grand Total.
M.	F.	Total.	M.	F.	Total.	M.	F.	
875	340	1,215	209	33	242	1,084	373	1,457

It will be seen from Table XIII that the actual number of syphilis and chancroid cases handled in 1932 was greater than the annual average. This also held good with regard to female gonorrhœa cases ; but less males than the average were dealt with in that year suffering from gonorrhœa.

TABLE XIII.

TOTAL CASES—NEW AND OLD—1928 to 1932.

	Syphilis		Chancroid		Gonorrhœa		Total V.D.		Not V.D.		Total All Cases.		Grand Total.
	M.	F.	M.	F.	M.	F.	M.	F .	M.	F.	M.	F.	
Five Years 1928–1932.......	1,437	492	79	—	3,021	503	4,537	995	3,289	977	7,826	1,972	9,798
1932 Cases	303	131	22	—	523	131	848	262	856	188	1,704	450	2,154
Average (5 years)	287·0	98·4	15·8	—	604·2	100·6	907·4	199·0	65·78	195·4	156·5	394·4	1959·6

The following table shows a percentage analysis of new cases, year by year, according to residential areas.

TABLE XIV.

Area.	1932. %	1931. %	1930. %	1929. %	1928. %	1928 to 1932. %
Salford	42·7	42·1	47·1	49·8	49·5	46·2
Manchester	28·0	27·6	26·1	26·3	21·5	26·0
Lancashire	16·4	16·1	12·8	10·2	9·5	13·0
Cheshire	3·2	3·2	2·9	2·5	3·5	3·0
Other Areas	4·3	3·3	3·4	1·6	4·7	3·5
Seamen (British)............	2·8	4·6	4·3	6·1	6·9	4·9
Seamen (Foreign)	2·4	3·1	3·4	3·5	4·4	3·4

The close relationship of the actual numbers to the total attendances is shown below.

TABLE XV.

	1932.		1931.		1930.		1929.		1928.		1928–29–30–31–32.	
Total Attendances (All Areas).	101,466		100,922.		92,954.		70,606.		35,503.		401,451.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Salford	46,670	46·2	42,398	42·1	47,851	51·4	38,448	54·5	18,729	55·0	194,096	49·7
Manchester	30,859	30·5	32,617	32·3	26,650	28·6	20,223	28·7	9,903	28·0	120,252	29·6
Lancashire	16,013	15·8	18,218	18·0	12,371	13·2	7,860	11·1	3,848	10·8	58,310	13·7
Cheshire	3,313	3·3	3,960	3·9	2,823	3·0	1,012	2·1	1,012	2·8	12,120	3·0
Other Areas	3,134	3·1	2,112	2·1	1,865	2·0	786	1·1	994	2·6	8,891	2·1
Seamen	1,477	1·1	1,617	1·6	1,394	1·8	1,753	2·5	1,017	2·8	7,258	1·9

It will be seen from Table XVI that the number of in-patient days per year has markedly increased. In this connection it will be clear that the present accommodation is no longer adequate.

TABLE XVI.

IN-PATIENTS—DAYS.

		Venereal.				Not V.D.	Total, All Cases.
		Syphilis.	Chancroid.	Gonorrhœa	Total V.D.		
1928.	Males	111	38	262	411	40	451
	Females ...	16	..	61	77	..	77
	Total (1) .	127	38	323	488	40	528
1929.	Males......	505	52	729	1,286	218	1,504
	Females ...	8	..	36	44	..	44
	Total (2) .	513	52	765	1,330	218	1,548
1930.	Males......	358	119	633	1,110	296	1,406
	Females ...	78	..	..	78	69	147
	Total 3) .	436	119	633	1,188	365	1,553
1931.	Males......	350	..	347	697	182	879
	Females ...	515	..	615	1,130	75	1,205
	Total (4) .	865	..	962	1,827	257	2,084
1932.	Males......	358	84	451	893	119	1,012
	Females ...	907	..	1,447	2.354	66	2,420
	Total (5) .	1,265	84	1,898	3,247	185	3,012
Total (1, 2, 3, 4, 5)		3,206	293	4,581		1,065	
Total V.D.			8,080				
Grand Total					9,145		

The following table is an analysis of the pathological examinations carried out in respect of Clinic patients.

TABLE XVII.

PATHOLOGICAL EXAMINATIONS.

		SYPHILIS.					GONORRHŒA.			Total (S.& G.	Grand Total
		Treponema Pallidum	Wass.	Kahn	Meinicke	Total (S.)	Gonococci	Pus Indices	Total (G.)		
1928	Clinic ..	30	—	—	—	483	1,241	2,020	3,261	3,744	
	Lab.....	—	453	—	—		—	—			
1929	Clinic ..	81	—	—	—	1,798	3,979	2,651	6,630	8,428	
	Lab.....	—	1,717	—	—		—	—			
1930	Clinic ..	152	—	—	—	3,394	5.599	2,268	7,867	11,261	
	Lab.....	—	3,242	—	—		—	—			
1931	Clinic ..	286	—	—	—	3,771	6.146	1,729	7,875	11,646	
	Lab.....	—	3,485	—	—		—	—			
1932	Clinic ..	372	—	—	2,064	8,299	7,085	1,984	9,069	17,368	
	Lab.....	—	3,736	2.127	—		—	—			
Totals		921	12,633	2,127	2,064		24,050	10,652			
		17,745					34,702				

GRAND TOTAL } Clinic 39,714 } — 52,447
Lab... 12,733 }

Congenital Syphilis.

While the following table shows the regrettable fact that no cases of congenital syphilis have been sent by general practitioners, it also shows that the other departments of the Public Health service are in close relationship with the Clinic, and that the officers concerned are fully alive to the matter of this disease as it occurs in children.

TABLE XVIII.

NEW CASES UNDER 15 YEARS OF AGE SUFFERING FROM CONGENITAL SYPHILIS.

How Sent.	Sex.		Total.	Per cent.
	Males.	Females.		
Eye Clinic	1	2	3	10·1
School Medical Officer............	..	4	4	13·3
Other Hospitals	1	2	3	10·1
M. and C. W. Department	..	1	1	3·3
Parents Attending Clinic	6	4	10	33·3
School Dentist	2	4	6	18·8
Brother or Sister Attending Clinic..	..	3	3	10·1
Private Practitioners	..	..	..	..
Totals	10	20	30	100

Table XIX illustrates the grave problem of defaulting in congenitally syphilitic children, to which reference has been made in previous Reports. Steps, however, are being taken whereby it is hoped that those who are in charge of such children will be compelled to bring them for treatment.

TABLE XIX.

				Defaulters.										Still attending, transferred, or otherwise disposed of.			
	Sex.		Total	Within one year.				Over one year.				Total Defaulters.	% Defaulters.				
	M.	F.		M.	F.	Total	%	M.	F.	Total	%			M.	F.	Total	%
C1 Under one year old.	10	12	22	5	10	15	68·18	3	—	3	13·63	18	81·81	2	2	4	18·19
C2 One to five years old.	11	17	28	7	9	16	52·85	—	1	1	3·57	17	60·71	4	7	11	39·29
C3 Five to fifteen years old.	52	60	112	17	20	37	33·03	6	8	14	12·50	51	45·53	27	34	61	54·47
Totals	73	89	162	29	39	68	41·97	9	9	18	11·11	86	53·08	33	43	76	46·92

VENEREAL DISEASES—APPENDIX I.

RETURN RELATING TO ALL PERSONS WHO WERE TREATED AT THE TREATMENT CENTRE AT SALFORD DURING THE YEAR ENDED 31ST DECEMBER, 1932.

	Syphilis.		Soft Chancre.		Gonorrhœa.		Conditions others than Venereal.		Total.		
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Totals.
1. Number of cases on 1st January under treatment or observation	474	159	..	..	420	88	173	28	1,067	275	1,342
2. Number of cases removed from the register during any previous year which returned during the year under report for treatment or observation of the same infection	16	5	..	..	3	12	..	..	19	17	36
3. Number of cases dealt with for the first time during the year under report (exclusive of cases under Item 4) suffering from :—											
Syphilis, primary	103	10	..	..	..	..	..	..	103	10	113
,, secondary	32	20	..	..	..	..	..	..	32	20	52
,, latent in 1st year of infection	6	9	..	..	..	..	..	..	6	9	15
,, all later stages	107	61	..	..	..	..	..	..	107	61	168
,, congenital	12	23	..	..	..	..	..	..	12	23	35
Soft Chancre	..	..	22	..	..	..	..	..	22	..	22
Gonorrhœa, 1st year of infection	..	..	..	..	466	103	..	..	466	103	569
,, later	..	..	..	..	11	15	..	..	11	15	26
Conditions other than venereal	..	..	..	..	..	..	845	188	845	188	1,033
Number of cases dealt with for the first time during the year under report known to have received treatment at other Centres for the same infection	27	3	..	..	43	1	11	..	81	4	85
Totals of Items 1, 2, 3 and 4	777	290	22	..	943	219	1,029	216	2,771	725	3,496
5. Number of cases discharged after completion of treatment and final tests of cure (see Item 15)	36	5	16	..	358	39	820	183	1,230	227	1,457
6. Number of cases which ceased to attend before completion of treatment and were, on first attendance, suffering from :—											
Syphilis, primary	26	6	..	..	..	..	..	..	26	6	32
,, secondary	9	10	..	..	..	..	..	..	9	10	19
,, latent in 1st year of infection	3	3	..	..	..	..	..	..	3	3	6
,, all later stages	52	30	..	..	..	..	..	..	52	30	82
,, congenital	10	12	..	..	..	..	..	..	10	12	22
Soft Chancre	..	..	..	..	..	..	..	..	..	..	..
Gonorrhœa, 1st year of infection	..	..	..	..	90	26	..	..	90	26	116
,, later	..	..	..	..	4	9	..	..	4	9	13
7 Number of cases which ceased to attend after completion of treatment but before final tests of cure (see Item 15)	23	4	..	..	80	11	..	..	103	15	118
8. Number of cases transferred to other centres or to institutions, or to care of private practitioners	63	9	2	..	95	5	..	..	160	14	174
9. Number of cases remaining under treatment or observation on 31st December	555	211	4	..	316	129	209	33	1,[illegible]	373	1,457
Totals of Items 5, 6, 7, 8 and 9	777	290	22	..	943	219	1,029	216	2,7[illegible]	725	3,496

(These totals should agree with those of Items 1, 2, 3 and 4.)

VENEREAL DISEASES—*Continued.*

	Syphilis.		Chancre.		Gonorrhœa.		Conditions other than Venereal.		Totals.		
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Totals.
10. Number of cases in the following stages of syphilis included in Item 6 which failed to complete one course of treatment:—											
Syphilis, primary	10	..	..	..	..	..	..	..	10	..	10
,, secondary	3	2	..	..	..	..	..	..	3	2	5
,, latent in 1st year of infection	1	..	..	..	..	..	..	..	1	..	1
,, all later stages	8	12	..	..	..	..	..	..	8	12	20
,, congenital	1	4	..	..	..	..	..	..	1	4	5
11. Number of attendances:—											
(*a*) for individual attention of the medical officers	17,733	7,482	163	..	9,959	2,604	3,982	562	31,837	10,648	42,485
(*b*) for intermediate treatment, e.g., irrigation, dressing	1,370	312	221	..	40,200	14,048	2,427	403	44,218	14,763	58,981
Total Attendances	19,103	7,794	384	..	50,159	16,652	6,409	965	76,055	25,411	101,466
12. In-patients:—											
(*a*) Total number of persons admitted for treatment during the year	20	30	7	..	23	39	15	7	65	76	141
(*b*) Aggregate number of "in-patient" days of treatment given	358	907	84	..	451	1,447	119	66	1,012	2,420	3,432

	Under 1 year.		1 and under 5 years.		5 and under 15 years.		15 years and over		Totals.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
13. Number of cases of congenital syphilis in Item 3 above classified according to age periods	..	2	1	5	9	13	2	3	12	23

VENEREAL DISEASES—*Continued.*

	Arsenobenzene Compounds.	Mercury.	Bismuth.
14. Chief preparations used in treatment of Syphilis:			
(*a*) Names of preparations	Stabilarsan, Novostab, Myosalvarsan, Neosilversalvarsan.	Nil.	Bivatol Stabismol.
(*b*) Total number of injections given (out-patients and in-patients)	*10,110	. .	12,639
(*c*) Number of injectons *included in* (*b*) given to patients who on first attendance at this Centre were suffering from primary and secondary syphilis	3.759	. .	4,182
15. Are the tests recommended in Memo. V21 as amended by Memo. V21a followed in deciding as to the discharge of the patient after treatment and observation for syphilis and gonorrhœa ? ..	Yes.		
If not, in what way are they modified ?	Not applicable.		

	Microscopical.		Serum Tests.		
	for spirochetes.	for gonococci.	Wassermann.	Others for Syphilis.	for Gonorrhœa.
16. PATHOLOGICAL WORK :—					
(*a*) Number of specimens examined at and by the medical officer of the treatment centre	372	7,085	. .	† 2,064	. .
(*b*) Number of specimens from patients attending at the centre sent for examination to an approved laboratory	. .	. .	3,736	‡ 2.127	. .

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* Does not include 126 Tryparsamide injections given during the year under report. † Meinicke Reactions. ‡ Kahn Reactions.

APPENDIX II. (*a*).

ROUTINE TREATMENT FOR ACUTE GONORRHŒA IN THE MALE.

Week		Irrigations.	Instillation.	Vaccine (Jenkins) G.C. = 1,400 to c. cm.	Additional Treatment.
1.	A1	Pot. Permang. 1 gr. to 1 pint 1–10,000	Silver Nucleinate 2% (N. 2.)	2 minims.	Routine Blood Test.
2.	A2	Pot. Permang. 2 grs. to 1 pint 1–5,000	Silver Nucleinate 5% (N. 5.)		
3.	A3	Pot. Permang. 3 grs. to 1 pint 1–3,300	Silver Nucleinate 5% (N. 5.)	Increase according to reaction. Maximum increase per week 5 m.	
4.	B1	Mercury Oxycyanide 1–10,000			
5.	B2	Mercury Oxycyanide 1–5,000			Massage of Ant. urethra over straight sounds twice or thrice weekly if no posterior urethritis.
6.	B3	Mercury Oxycyanide 1–3,300			Ditto.
7.	C1	Choleval 7½ grs. to 2 pts. 1–2,400	Choleval ¼%		Ditto.
8.	C2	Choleval 15 grs. to 2 pts.	Choleval ½%		Prostatic Massage twice weekly.

9.	No Treatment.		ROUTINE BLOOD TEST. Morning urine examined daily for seven days. Pus indices taken by Duke's method.	
10.	No Treatment.	Tests for Cure.	V.A. 300 millions	Morning slide P.B. daily for 3 or 4 days.
11.	No Treatment.			Examination by Urethroscope and Curved Sounds.
12.	No Treatment.		Aolan	Morning slide P.B. daily for 3 or 4 days.
13 to 16.	No Treatment.	Rest.		
17.	No Treatment.		Aolan	Morning slide P.B. daily for 3 or 4 days. If no. G.c. Discharge as cured.

Criteria of Cure—

(1) No urethral discharge, and no pus in the morning urine 7 days after cessation of treatment.

(2) No Gonococci in urethral or Prostatic secretions.

(3) No bacteriological or clinical evidence after provocative vaccines.

Appendix II (*b*).

CITY OF SALFORD—MUNICIPAL CLINIC.

Routine Treatment for Posterior Gonorrhœal Urethritis in the Male.

Week	Irrigations.	Instill.	Medicine.	Vacc. Gc. = 1,400 to c.c.	Additional Treatment.
1.	A½ Pot. Permang. 1 in 20,000	Silv. Nucleinate 2% (N 2)	Mist. Chl. Co. ½ oz. t.d.s.	2 minims.	Blood test. Suspensory bandage.
2.	A½ Do. 1 in 20,000	Do. 2% (N 2)	Do.		
3.	A½ Do. 1 in 20,000	Do. 2% (N 2)	Do.		
4.	A½ Do. 1 in 20,000	Do. 2% (N 2)	Do.		If urine in glass 2 is clear, give A1 N5.
5.	A1 Do. 1 in 10,000	Do. 5% (N 5)		Increase according to reaction. Maximum increase per week 5 m.	Prostatic massage twice weekly.
6.	A2 Do. 1 in 5,000	Do. 5% (N 5)			Ditto.
7.	A3 Do. 1 in 3,300	Do. 5% (N 5)			Ditto.
8.	B1 Mercury oxycyanide 1 in 10,000				Ditto
9.	B2 Do. 1 in 5,000				Ditto. Blood test.
10.	B3 Do. 1 in 3,300				Prostatic massage twice weekly.
11.	C1 Cholcval 1 in 2,400				Massage over straight to sounds.
12.	C2 Do. 1 in 1,200				Ditto
13.	No Treatment.				Morning urine examined daily for 7 days. Pus indices taken by Dukes' method.
14.	No Treatment.	Tests for Cure.		V.A. 300 millions	Morning slide P.B. daily for 3 or 4 days.
15.	No Treatment.				Urethroscope Examination. Curved Sounds.
16.	No Treatment.			Aolan	Morning slide P.B. daily or 3 or 4 days.
17 to 20	No Treatment.	Rest.			
21.	No Treatment.			Aolan	Morning slide P.B. daily for 3 or 4 days. If no G.c., discharge as cured.

Criteria of Cure—

(1) No urethral discharge, and no pus in morning urine 7 days after cessation treatment.

(2) No Gonococci in urethral or Prostatic secretions.

(3) No bacteriological or clinical evidence after provocative vaccines.

APPENDIX III.

CONGENITAL SYPHILIS.

Routine Treatment

Category C1 and C2—Birth to 5 years.

1st Year	Stovarsol orally	for 4 weeks	52 Weeks.
	Lipo-soluble Bi	.. 12 weeks	
	Stovarsol orally	.. 8 weeks	
	Lipo-soluble Bi	.. 12 weeks	
	Arspehenamine	.. 8 weeks	
	Lipo-soluble Bi	.. 8 weeks	
2nd Year	Rest with tonic treatment	for 13 weeks	52 Weeks.
	Arsphenamine	.. 4 weeks	
	Lipo-soluble Bi	.. 4 weeks	
	Arspehnamine	., 4 weeks	
	Lipo-soluble Bi	.. 4 weeks	
	Rest with tonic treatment	,, 7 weeks	
	Arsphenamine	.. 4 weeks	
	Lipo-soluble Bi	.. 4 weeks	
	Arsphenamine	.. 4 weeks	
	Lipo-soluble Bi	.. 4 weeks	
3rd Year	As for 2nd Year	52 weeks	156 Weeks.
4th Year	As for 2nd Year	52 weeks	
5th Year	As for 2nd Year	52 weeks	
		Total....	260 Weeks.

"Arspehenamine" here means any "914" preparation. Stabilarsan or a Sulpho-compound.

If serology is negative and C.S.F. normal, discontinue treatment and apply cure-tests.

Category C3—5 to 15 Years, or cases C1 and C2
which are positive at end of Course.

1st Year	Arsphenamine twice weekly	for 10 weeks	52 Weeks.
	Lipo-soluble Bi	,, 6 weeks	
	Arsphenamine	,, 10 weeks	
	Lipo-soluble Bi .. ,,	.. 6 weeks	
	Arsphenamine ,, ,,	,, 10 weeks	
	Lipo-soluble Bi ,, ..	.. 4 weeks	
	Arsphenamine	.. 6 weeks	
2nd Year	Rest for......................	26 weeks	52 Weeks.
	Arsphenamine twice weekly	for 10 weeks	
	Lipo-soluble bi ,, ..	.. 6 weeks	
	Arsphenamine ,, ..	,, 10 weeks	
3rd Year	Rest for......................	13 weeks	
	Arsphenamine twice weekly	for 10 weeks	
	Lipo-soluble Bi	.. 6 weeks	
	Arsphenamine	,, 10 weeks	
	Lipo-soluble Bi ,, ,,	,, 6 weeks	
	Arsphenamine ,, ,,	.. 7 weeks	
4th Year	Repeat as 3rd Year	52 weeks	104 Weeks.
5th Year	Repeat as 3rd Year	52 weeks	
		Total......	260 Weeks.

If serology is negative and C.S.F. normal, discontinue treatment and apply cure-tests.

If serology is positive, repeat as for 3rd Year, etc.

APPENDIX IV.

ROUTINE COURSES FOR TREATMENT OF EARLY MALE SYPHILIS.

(*a*) COURSES FROM 1928 TO 1930 ("OLD" COURSES).

Course and Degree of Disease.	Agent	No. of Injections per Week.	No. of Weeks.	Grams.		T.U.	E.I.
				Arsph.	Bi.		
COURSE I. 1st Degree or Sero-negative Primary.	Stabilarsan	1	6	3·45	—	6	
	Bismuth	2	4	—	1·6	2	
	Stabilarsan	1	6	3·45	—	6	
	Bismuth	2	4	—	1·6	2	
	Stabilarsan	1	4	2·40	—	4	
	Total	—	24	9·25	3·2	20	83·3
COURSE II. 2nd Degree or Sero-positive Primary.	Stabilarsan	1	8	4·65	—	8	
	Bismuth	2	8	—	3·2	4	
	Stabilarsan	1	8	4·65	—	8	
	Bismuth	2	8	—	3·2	4	
	Total	—	32	9·30	6·4	24	75·0
COURSE III. 3rd Degree or Early Secondary.	Stabilarsan	1	8	4·65	—	8	
	Bismuth	2	6	—	2·4	3	
	Stabilarsan	1	8	4·65	—	8	
	Bismuth	2	6	—	2·4	3	
	Stabilarsan	1	6	3·45	—	6	
	Bismuth	2	4	—	1·6	2	
	Total	—	38	12·75	6·4	30	79·0
COURSE IV. 4th Degree or Late Secondary.	Stabilarsan	1	8	4·65	—	8	
	Bismuth	2	8	—	3·2	4	
	Stabilarsan	1	8	4·65	—	8	
	Bismuth	2	8	—	3·2	4	
	Stabilarsan	1	8	4·65	—	8	
	Bismuth	2	8	—	3·2	4	
	Total	—	40	14·05	9·6	36	90·0

Various bismuth preparations were used in these Courses, but chiefly Hypaloid Bismuth and Bismogenol. In the above Table the former preparation is indicated.

During the period from 1928 to 1930, nearly 500 cases of early male syphilis were treated in accordance with the above Scheme.

APPENDIX IV.

(*b*) COURSES FROM 1931 TO 1933 (" NEW " COURSES).

Course and Degree of Disease.	Agent.	No. of Injections per Week.	No. of Weeks.	Grams.		T.U.	E.I.
				Arsph.	Bi.		
COURSE I. 1st Degree or Sero-negative Primary.	Stabilarsan	1	6	3·45	—	6	
	Bivatol	2	4	—	0·64	3	
	Stabilarsan	1	6	3·45	—	6	
	Bivatol	2	4	—	0·64	3	
	Stabilarsan	1	6	3·45	—	6	
	Total	—	26	10·35	1·28	24	92·
COURSE II. 2nd Degree or Sero-positive Primary.	Stabilarsan	1	8	4·65	—	8	
	Bivatol	2	6	—	0·96	4·5	
	Stabilarsan	1	8	4·65	—	8	
	Bivatol	2	6	—	0·96	4·5	
	Stabilarsan	1	6	3·45	—	6	
	Total	—	34	12·75	1·92	31	91·
COURSE III. 3rd Degree or Early Secondary.	Stabilarsan	1	8	4·65	—	8	
	Bivatol	2	6	—	0·96	4·5	
	Stabilarsan	1	8	4·65	—	8	
	Bivatol	2	6	—	0·96	4·5	
	Stabilarsan	1	8	4·65	—	8	
	Bivatol	2	4	—	0·64	3	
	Total	—	40	113·95	2·56	36	90·
COURSE IV. 4th Degree or Late Secondary.	Stabilarsan	1	10	5·85	—	10	
	Bivatol	2	6	—	0·96	4·5	
	Stabilarsan	1	10	5·85	—	10	
	Bivatol	2	6	—	0·96	4·5	
	Stabilarsan	1	10	5·85	—	10	
	Bivatol	2	6	—	0·96	4·5	
	Total	—	48	17·55	2·88	43·5	90·

During the period from 1931 to 1933, approximately 300 cases of early male syphilis were treated in accordance with the above Scheme.

APPENDIX IV.

(c) COURSES COMMENCING IN 1934 ("Revised" Courses).

Course and Degree of Disease.	Agent.	No. of Injections per Week.	No. of Weeks.	Grams.		T.U.	E.I.
				Arsph.	Bi.		
COURSE I. 1st Degree or Sero-negative Primary.	Stabilarsan	3	13	13·0	—	13	
	Lipo-soluble Bi.	1 or 2	4	—	0·4	3	
	Stabilarsan	3	5	5·0	—	5	
	Lipo-soluble Bi.	1 or 2	4	—	0·4	3	
	Total	—	26	18·0	0·8	24	92·
COURSE II. 2nd Degree of Sero-positive Primary.	Stabilarsan	3	13	13·0	—	13	
	Lipo-soluble Bi.	1 or 2	4	—	0·4	3	
	Stabilarsan	3	8	8·0	—	8	
	Lipo-soluble Bi.	1 or 2	4	—	0·4	3	
	Stabilarsan	3	5	5·0	—	5	
	Total	—	34	26·0	0·8	32	91·
COURSE III. 3rd Degree or Early Secondary.	Stabilarsan	3	13	13·0	—	13	
	Lipo-soluble Bi.	1 or 2	4	—	0·4	3	
	Stabilarsan	3	8	8·0	—	8	
	Lipo-soluble Bi.	1 or 2	4	—	0·4	3	
	Stabilarsan	3	6	6·0	—	6	
	Lipo-soluble Bi.	1 or 2	5	—	0·5	3·75	
	Total	—	40	27·0	1·3	36·75	91·
COURSE IV. 4th Degree or Late Secondary.	Stabilarsan	3	13	13·0	—	13	
	Lipo-soluble Bi.	1 or 2	4	—	0·4	3	
	Stabilarsan	3	10	10·0	—	10	
	Lipo-soluble Bi.	1 or 2	5	—	0·5	3·75	
	Stabilarsan	3	10	10·0	—	10	
	Lipo-soluble Bi.	1 or 2	6	—	0·6	4·5	
	Total	—	48	33·0	1·5	44·25	92·

In the above Courses the bismuth preparation indicated is Stabismol in minimal therapeutic doses of 0·1 gram of the element every 7-day period—i.e., one injection of 1 c.c. per week.

SECTION IV.

Report Relating to the Veterinary Inspector's Department.

DISEASES OF ANIMALS ACTS, 1894-1927.

Certain diseases of animals are subject to administrative control by the Ministry of Agriculture and Fisheries. Fourteen outbreaks were dealt with during the year, comprising one case of Tuberculosis, one of Parasitic Mange, and 12 of Swine Fever. Although the total number of outbreaks does not appear to be high, there are various Acts and Orders of a preventive nature which entail a considerable amount of work which cannot be adequately shown in figures.

Anthrax Order of 1928.

Any sudden, unexplained death in cattle is regarded as suspected Anthrax until the contrary is proved. Owners of cattle are alive to the danger of cutting any such carcase and of the futility of attempting to save the carcase for food, so that it is only on rare occasions that this is attempted. Five reported cases were investigated with negative results. The cattle had either died in lairs in the City or in cattle waggons during transit.

Foot and Mouth Disease Order of 1928.

There are comparatively few dairy cattle in Salford, but each week a large number of animals for slaughter are kept in lairs in the City prior to being moved to slaughterhouses in the surrounding districts. This, together with the fact that there are two railway stations in Salford which are the stations for the Manchester Abattoir, makes Salford an important distributing centre.

The majority of the animals received in the City are Irish cattle, but there is also quite a number of cattle from different parts of England and Wales, consequently one has always to be on the alert for the introduction of Foot and Mouth Disease.

No cases occurred in the City, and although there were a number of outbreaks in different parts of England and Wales, at no time was the City included in an Infected Area.

For the purpose of preventing swine contracting Foot and Mouth Disease from swill, animal offal, waste foodstuffs, etc., the piggeries have been visited regularly to ensure that all such foods are thoroughly boiled before being brought into contact with pigs in accordance with the provisions of the Foot and Mouth (Boiling of Animal Foodstuffs) Order of 1928.

Tuberculosis Order, 1925.

This Order provides for the notification of certain types of tuberculosis in cattle.

The permanent cow population is very low, approximately fifty dairy cows, and consequently comparatively few animals are dealt with under this Order. One cow was found affected with tuberculosis of the udder and was valued at £15 and slaughtered at the Corporation slaughter-house. The post-mortem examination showed it to be affected with tuberculosis, but not "advanced" tuberculosis within the meaning of the Order, and compensation at the rate of three-fourths of the valuation was paid to the owner.

Importation of Dogs and Cats Order, 1928.

Notices were received from the Customs Officers that 43 ships were in dock with dogs aboard. The ships were visited in order to ascertain that the dogs were being controlled in accordance with the requirements of the Order.

Parasitic Mange Order of 1911.

This disease was very prevalent about 10 years ago, but since then there has been a gradual reduction in the number of outbreaks and now it is only occasionally seen.

One case occurred in a horse in stables occupied by a dairy company. Ten other horses which were in the stables were kept under observation but the disease did not spread from the affected horse. The horse ultimately recovered and the restrictions on the premises were removed.

Importation of Animals Act, 1922.

ANIMALS (LANDING FROM IRELAND, CHANNEL ISLANDS AND ISLE OF MAN) ORDER OF 1923.

Importation of Canadian Cattle Order, 1923.

Imported animals on arrival at premises in Salford from the ports of landing must remain there for a period of six days, unless moved to a slaughterhouse by licence during that period. A large number of Irish cattle and sheep were licensed to cattle lairs in Salford, and the lairs were frequently visited to see that the conditions of the Order were observed. The Veterinary Inspector issues all licences under this Order, and during the year 1,011 licences were issued authorising the movement of 14,176 cattle and 26,498 sheep.

The conditions contained in the licences were generally observed by the owners of the animals but on three occasions it was found necessary to take proceedings for contraventions of the Order.

Thirty-eight sheep were moved from premises in Salford during the prescribed period of detention, no licence having been issued authorising the movement. The person moving the animals was charged with unlawfully moving 38 imported sheep without having obtained a licence for the movement, and was convicted of the offence charged against him and fined 38s. and ordered to pay 21s. costs. The owner of the animals was charged with permitting the movement and was fined 9s. 6d.

On another occasion, sheep which should have been moved from Birkenhead to the Manchester Abattoir, via Salford Cattle station, were moved from the station to fields in Salford and detained there for two days before being taken to the Abattoir. The person in charge of the sheep was charged with failing to move imported sheep without unnecessary delay, and direct to the authorised place of destination. He was convicted of the offence charged against him and fined 24s.

On another occasion sheep being moved in a motor float from Birkenhead to fields in Salford were unloaded at premises in Salford, and after remaining there for some hours were taken to the fields. The person in charge was charged with failing to move the sheep without unnecessary delay to the authorised place of destination, and was convicted and fined 34s. 2d.

There are eight cattle lairs in Salford, used almost entirely for the detention of fat cattle and sheep intended for slaughter. These lairs have been visited regularly and were generally found to be conducted in a satisfactory manner.

Swine Fever Order of 1908.

Premises in the City which were declared to be infected premises in August, 1931, continued under restrictions until June, 1932, when the restrictions were finally withdrawn.

Twelve outbreaks were found in one of the slaughterhouses in the City, and this necessitated the destruction of 89 carcases and offals. The affected carcases were destroyed by burning at the Corporation Destructor under the supervision of an Inspector.

Most of these cases were in pigs from premises where the disease had not been previously notified, and on subsequent inspection by an Inspector of the Ministry of Agriculture and Fisheries more affected pigs were found on the premises. Other cases were in carcases of pigs which were on licence from infected premises.

In every case the Ministry of Agriculture and Fisheries and the local authority of the place of origin were notified and the conditions of the Order observed.

Transit of Animals Order of 1927.

TRANSIT OF ANIMALS (AMENDMENT) ORDER OF 1931.

This Order contains a number of provisions relating to the carriage of animals by road and rail.

There are two cattle stations in Salford which are the principal stations for the Manchester Abattoir, and they are also depots for cleaning waggons from outside districts.

The stations were visited regularly and the cleansing and disinfection of the cattle trucks and pens has been carried out in a satisfactory manner.

There were 14,633 cattle trucks cleansed and disinfected during the year.

The number of cattle received and forwarded out of the City was as follows :—

Cattle Received into the City.

Cattle.	Sheep.	Pigs.	Calves.	Horses.
41,560	263,555	2,094	708	110

Forwarded Out of the City.

Cattle.	Sheep.	Pigs.	Calves.	Horses.
409	1,033	107	—	57

Road vehicles used for the carriage of animals were frequently inspected to ensure that they were disinfected and constructed as required by the Order, and also that the records of stock carried were kept up to date.

THE MILK SUPPLY.

Milk Supply to the Institutions.

Three different grades of milk are supplied to the Hospitals and Special Schools, viz., "Pasteurised," Grade "A," and milk equal to Grade "A" in quality but not produced under licence. This latter grade is considered necessary for the Special Schools as the supply is intermittent.

Two farms supply approximately 120 gallons of Grade "A" milk daily. They are licensed producers, and besides being supervised by the licensing authorities, are frequently visited by the Corporation Veterinary Inspector for the purpose of examining the cattle and supervising the methods of production. The contracts are renewed every 12 months, but the present supply has been very satisfactory, and the contract has not been changed since the Corporation decided to have Grade "A" milk in 1929.

During the last 18 months milking machines have been installed on both farms, and judged by the results of the milk samples, this method of milking is satisfactory. There is, however, nothing to choose between this method and good hand milking, except from the point of view of the producer, who finds the machine quicker and cheaper.

When the cattle are examined, particular attention is directed to the detection of diseases of the udder. In one case a recently purchased cow was found with a tubercular udder. This cow was slaughtered by the local authority under the Tuberculosis Order, 1925.

In addition to supervision on the farm, samples of milk are taken when the milk is delivered at the Hospitals. The samples are submitted to the City Bacteriologist for examination for bacterial content.

Seventeen samples were submitted from one farm and the average number of bacteria per c.c. was 8,294, and only on one occasion were coliform organisms present in 1/100 of a c.c. From the other Grade "A" farm, 13 samples were taken and the average number of bacteria per c.c. was 6,384, and in no sample were coliform organisms found in 1/10 of a c.c. These results have been consistently good, and they are a good indication of the conditions on the farms. The number of bacteria per c.c. is well within the maximum permitted for Grade "A" milk, i.e., 200,000 organisms per c.c. and no coliform organisms in 1/100 of a c.c.

The milk supply to the Special Schools has not been so satisfactory. Thirty samples were taken and eight, or 26·6 per cent. failed to comply with the standard of Grade "A" milk. At one period the samples were so consistently bad that the Health Committee was obliged to terminate the contract and arrangements were made with another dealer to supply the milk until the end of the contract period. The cause was probably the length of time the milk was in transit, particularly as the trouble occurred during the Summer months. It would be more satisfactory if this milk was also purchased as Grade "A" milk.

In addition to the milk supplied by contract, many of the schools receive a considerable quantity of milk daily, for consumption by the scholars. This milk is delivered in one-fourth or one-third pint bottles, for which the scholars are charged one penny. It is entirely a private arrangement between the headmasters and the milk dealers and the Corporation do not take any active part in it.

The contract for "Pasteurised" milk is for periods of six months. Two licensed dealers have been supplying this milk and 33 samples were examined for bacterial content, two of which failed to come within the maximum allowed. Although there is no coliform standard for "Pasteurised" milk, 43·7 per cent of the samples contained coliform organisms in dilutions of 1/10 of a c.c. or more.

BACTERIOLOGICAL EXAMINATION OF SAMPLES OBTAINED FROM CONTRACT MILK SUPPLY.

	No. of samples examined.	Bacteria per c.c.								Presumptive Coli. Test.			
		0–1,000	1,000–10,000	10,000–30,000	30,000–50,000	50,000–100,000	100,000–150,000	150,000–200,000	Over 200,000.	Coli. absent in $\frac{1}{10}$	Present $\frac{1}{10}$	Present $\frac{1}{100}$	Percentage with Coli. in $\frac{1}{10}$
Pasteurised ...	33	15	7	8	—	1	2	—	—	19	5	9	43·7
Special	30	—	12	5	4	—	—	1	8	18	4	8	40·0
Grade "A" (1)	17	4	9	1	3	—	—	—	—	15	1	1	11·7
Grade "A" (2)	13	3	6	3	1	—	—	—	—	13	—	—	Nil.

Milk (Special Designations) Order, 1923.

The following licences were issued during the year :—

13 Dealer's Licences to sell milk as "Certified."
2 Supplementary Licences to sell milk as "Certified."
9 Dealer's Licences to sell milk as Grade "A."
2 Supplementary Licences to sell milk as Grade "A."
1 Supplementary Licence to sell milk as Grade "A" (Tuberculin Tested).
17 Dealer's Licences to sell milk as "Pasteurised."
4 Supplementary Licences to sell milk as "Pasteurised."

One would think from the number of licences issued under this Order that a fairly large amount of graded milk is sold. This is not the case, however, many dealers only supply one or two customers and the total amount of milk sold under this Order is practically negligible.

It should be pointed out that a large percentage of retail milk is subjected to Pasteurisation, but as it is not sold as "Pasteurised" milk the local authority has no control over the method of treatment or the apparatus used. It is suggested that only licensed Pasteurisers should be allowed to treat milk by heat and that it should be done in the manner prescribed by the Milk (Special Designations) Order, 1923.

BACTERIOLOGICAL EXAMINATION OF MILK SAMPLES.

Samples of milk for bacteriological examination are submitted to the City Pathologist. One hundred and thirty-seven samples were examined for bacterial content.

" Certified " milk	4	samples
Grade " A " milk	31	,,
" Pasteurised " milk	55	,,
Special Contract milk	30	,,
Farm milk	17	,,
	137	

When an unsatisfactory sample of ordinary farm milk was found the Medical Officer of Health of the local authority in which the milk was produced was notified and the farm was visited by an inspector of that local authority.

Tuberculous Milk.

Three hundred and ninety-nine samples were examined by guinea pig inoculation for tuberculosis. The following table shows how the total number was comprised.

Origin.	Number examined.	Number positive.
Farm	374	30
" Certified " milk	4	—
Grade " A " (Tuberculin Tested) milk	1	—
Grade " A " milk	1	—
" Pasteurised " milk	6	—
Single and group samples	13	4
	399	34

Sixty-eight samples from single cows and groups of cows were examined microscopically.

Each sample from farm supplies represented a mixed milk from all the milking cows on one farm, and of the 374 samples examined, 30, or 8·02 per cent, were positive. This is a slightly higher percentage than last year, but is about the average of previous years and corresponds very closely with the figure given for the whole of England and Wales.

The counties of Cheshire and Lancashire are the chief sources of supply and as has invariably been the case in the past, Cheshire has a much higher percentage positive than Lancashire, having 11·2 per cent, compared with 4·3 per cent from Lancashire.

When a sample of farm milk is examined, two guinea pigs are inoculated, one being killed after three weeks, and the other after six weeks. This practice was commenced in 1931 and has been continued during the whole of 1932. Prior to 1931, only one guinea pig was inoculated, and it was killed after three weeks. The results have fully justified the change as thirteen samples proved positive at six weeks which had been returned negative at three weeks. That is 43·3 per cent would have been missed if they had been examined at three weeks only.

On a sample being found to be positive the Medical Officer of Health of the producing authority was notified and the cattle were examined by the Veterinary Inspectors for the County and for the Corporation.

The examination of the milking herds on 30 farms resulted in one cow being found giving tuberculous milk on 19 farms, two cows on one farm, and three cows on one farm, a total of 24 cows. These animals were all slaughtered by the respective local authorities under the Tuberculosis Order, 1925. On nine farms no animal was found affected with tuberculosis at the time of the inspection and a sample of milk taken from the whole herd proved to be negative.

TABLE SHOWING NUMBER OF SAMPLES OF MILK OBTAINED FROM VARIOUS COUNTIES, AND THE NUMBER OF PERCENTAGE FOUND TO BE TUBERCULOUS, FOR THE YEARS 1923-1932.

	Year 1923.			Year 1924.			Year 1925.			Year 1926.			Year 1927.		
	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.
Cheshire	123	17	13·8	126	14	11·1	203	22	10·8	157	14	8·9	178	20	11·2
Lancashire ..	94	5	5·3	76	6	8·0	90	4	4·4	152	7	4·6	124	6	4·8
Yorkshire ...	21	1	4·7	14	..	..	16	1	6·2	17	1	6·0	41	4	9·7
Staffordshire.	7	..	..	7	1	14·3	2	..	..	1	..	..	8	1	12·5
Derbyshire ..	31	..	..	39	2	5·0	14	2	14·3	..	..	..	9	..	..
Shropshire ..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..
Westmorland	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Cumberland .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wales	1	1	100·0	1	..	..	1	..	..	..	..	..	..	..	..
Scotland	1	..	..	2	..	..	1	..	..	1	..	..	..	..	..
Mixed	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..
Pasteurised..	..	..	..	..	..	..	..	..	..	..	..	..	11	..	..
Special	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total for year	278	24	8·63	265	23	8·7	331	29	8·75	329	22	6·68	371	31	8·3

	Year 1928.			Year 1929.			Year 1930.			Year 1931.			Year 1932.		
	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.
Cheshire	220	23	10·4	240	26	10·8	253	21	8·3	225	20	8·8	195	22	11·2
Lancashire ..	135	7	5·1	148	14	9·4	156	7	4·4	151	7	4·6	138	6	4·3
Yorkshire ...	58	4	6·9	48	1	2·0	41	1	2·4	40	2	5·0	31	..	..
Staffordshire.	15	2	13·6	8	2	25·0	7	..	..	5	1	20·0	10	2	20·0
Derbyshire ..	15	1	6·3	9	1	11·1	1	..	..	1	..	..	..	..	..
Shropshire ..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Westmorland	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cumberland .	..	..	..	..	..	..	7	1	14·2	..	..	..	..	..	..
Wales	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scotland	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mixed	12	2	16·6	9	1	11·1	12	1	8·5	..	..	..	..	..	..
Pasteurised..	9	..	..	1	0	0	53	..	..	15	..	..	6	..	..
Special	..	..	..	..	..	..	..	..	..	5	..	..	6	..	..
Total for year	466	39	8·3	463	45	9·71	530	31	5·8	442	30	6·78	386	30	7·7

Inspection of Dairies.

There are 761 persons registered as Retail Purveyors of Milk, this number being 45 more than were registered last year. The reason for the increase is that an erroneous impression is abroad that persons selling bottled milk only do not require to be registered, and it is only after they are found by the Inspectors that they are added to the Register. In the case of a person selling bottled milk only, the person is registered as a Retail Purveyor of Milk, but the premises are not registered as a Dairy.

Since 1928, the sale of loose milk from shops of the mixed business type has been discouraged, and an effort made to limit the sale of milk from such premises to bottled milk only. In 1928, approximately 700 premises were registered as dairies, many of which were unsuitable by reason of the nature of the goods exposed for sale in conjunction with loose milk, or because the premises were so crowded with goods exposed for sale that it was impossible to keep such premises free from dust.

The number of dairies is gradually being reduced, and there are now 193 premises from which loose milk is sold and 499 from which bottled milk only is sold.

When a dairy is considered unsuitable for the sale of loose milk, Section 2 of the Milk and Dairies (Amendment) Act, 1922, is put into operation and the Milk Purveyor appears before the Health Committee to show cause why he should not be removed from the Register. During the year 28 Milk Purveyors appeared before the Committee, 25 of whom were removed from the Register, and three made the necessary alterations to the premises so that the objections no longer existed.

There are also 69 dairies proper, in that nothing but milk and dairy produce is sold. These premises are constantly visited and attention paid to the storage accommodation, cleanliness of premises and utensils, and what is most important, to the cleansing of returned bottles. No person is allowed to fill bottles with milk unless he is equipped with steam for the sterilisation of the bottles. Several tests were made to see if the methods of sterilising the bottles were satisfactory. The insides of the bottles were lined with gelatine broth, the bottles capped and incubated at room temperature. In some cases, even where steam was used, numerous colonies appeared after a few days, but in others the media remained clear after several weeks. Where the sterilisation was unsatisfactorily carried out, the premises were visited and the method of cleansing supervised. The cause was usually that the steam chest was not being heated to a high enough temperature or the temperature was not maintained for a sufficient length of time. Showing the colonies to the Milk Purveyors created a more lasting impression than could have been done by mere explanation.

On the whole, the dairies are generally satisfactory and no serious cause of complaint was found.

Unsound Food.

The following table shows the amount and class of unsound food destroyed during the year. All unsound food is destroyed by burning, either on the premises or at the Corporation Destructor.

	Tons.	cwts.	qrs.	lbs.
Pork	29	16	3	18
Beef	9	6	2	13
Turkeys and Geese	—	10	—	—
Mutton	—	5	—	5
Flour	—	1	1	—
Ham	—	—	—	8
	39	19	3	16

TABLE OF MONTHLY SEIZURES OF DISEASED AND UNSOUND FOOD DISCOVERED DURING ROUTINE INSPECTION, AND OF UNSOUND FOOD SURRENDERED BY THE OWNER THEREOF DURING 1932.

Month.	No. of seizures.	Beef lbs.	Mutton lbs.	Pork lbs.	Miscel. lbs.	Total.
January	163	682	30	3,236	—	3,948
February	167	756	12	3,766	—	4,534
March	177	806	35	7,032	—	7,873
April	235	2,170	10	9,764	—	11,944
May	195	640	—	10,340	—	10,980
June	63	1,434	—	2,091	—	3,525
July	67	1,012	—	2,562	—	3,574
August	85	1,201	225	2,266	—	3,692
September	147	292	4	4,222	148	4,666
October	230	3,288	14	6,426	—	9,728
November	295	4,528	114	8,860	—	13,502
December	363	4,092	121	6,289	1,120	11,622
	2,187	20,901	565	66,854	1,268	89,588

TABLE SHOWING THE AMOUNT OF FOOD CONDEMNED FROM VARIOUS CAUSES DURING 1932.

No. of seizures.	Cause of seizure.	Weight in lbs.
1,240	Tuberculosis	46,205
180	Distomatosis	1,118
165	Cirrhosis	1,146
119	Pneumonia	2.519
119	Hydatid Cysts	980
105	Pleurisy	1,080
103	Swine Fever	17,700
23	Decomposition	2,869
19	Abscess	386
12	Jaundice	2,060
11	Septicæmia	1.470
11	Moribund	2,905
10	Swine Erysipelas	1,590
8	Rickets and Emaciation	730
7	Dropsy	1.220
7	Peritonitis	1,154
7	Nephritis	548
7	Mastitis	56
6	Injury	592
5	Enteritis	550
5	Cavernous Angioma	60
4	Emaciation	1,560
4	Pyæmia	674
2	Congestion	8
2	Bacterial Necrosis	24
2	Fatty Degeneration	24
2	Actinomycosis	60
1	Pericarditis	10
1	Mould	140
1	Johnnes Disease	150
2.187		89.588

Of the total weight of meat seized, 20 tons 12 cwts. 2 qrs. 5 lbs., or 51·5 per cent, was seized on account of tuberculosis.

Slaughterhouses.

One new private slaughterhouse was licensed during the year, so that there are now seven private and one public slaughterhouses in the City.

Four of the private slaughterhouses are used for the killing of pigs only. The public slaughterhouse is divided into booths, and part is let to a private butcher, part to a horse slaughterer, and the remainder used for casual slaughtering.

The slaughterhouses have been visited whenever slaughtering has, taken place, 2,788 visits having been made.

NUMBER OF CARCASES INSPECTED.

	Number inspected.
Cattle	2,234
Sheep	11,686
Pigs	16,503
	30,423

Byelaws in Relation to Slaughterhouses.

Section 4 of the Corporation Byelaws relating to slaughterhouses makes the use of a mechanically operated instrument for the stunning of animals before slaughter compulsory. The usual method with pigs and sheep is the Cash Captive Bolt, but towards the end of the year one firm killing a large number of pigs introduced an electrical stunning instrument. This method is very satisfactory and the carcases of pigs stunned in this way are definitely superior to those that have been shot.

On one occasion when a slaughterhouse was visited, slaughtering of sheep was in progress ; eighteen had been killed and there was no evidence to show that they had been stunned before bleeding. The occupier of the slaughterhouse and two of his employees were charged with failing to comply with Section 4 of the Byelaws. One employee was fined 10s., and the case against the other was dismissed. The occupier of the slaughterhouse was convicted of aiding and abetting and was fined £3.

Retail Meat Shops.

Six hundred and eighty-five visits of inspection have been made to retail meat shops. It is not necessary for retail butchers to be registered, but a register is kept by the Department as it ensures better supervision.

Attention is paid to the condition of the meat, general cleanliness of premises, utensils, etc., and inspection of the cellar and back premises. The provisions of the Sale of Food Order, 1921, in relation to the labelling of imported meat are observed. It is often necessary to direct attention to the unsatisfactory way in which this is done. In 14 instances written notice was served on the occupiers of premises for failure to comply with the requirements of this Order. In no case were proceedings taken as subsequent visits showed that the cause of complaint had been removed.

On 11 occasions a small quantity of unsound meat was found exposed for sale, but in no instance did the circumstances warrant proceedings being taken, and the occupiers were allowed to surrender the meat to the Inspector for destruction.

Other causes for complaint were dirty and untidy premises, dirty and untidy cellars and yards, and failing to take proper precautions to prevent the meat from becoming contaminated. A number of shops selling general groceries are now also selling meat. This affords a difficult problem as this was evidently not contemplated when the Public Health (Meat) Regulations, 1924, were made.

Food Preparing Premises.

The food preparing premises are mostly premises where meat products such as brawn, sausages, black puddings, pies, etc., are made. These premises are regularly visited and strict attention is paid to cleanliness as this type of food is an excellent media for bacterial growth. Several minor complaints were made; in two instances meat of doubtful quality was surrendered and destroyed. Other causes of complaint were dirt and general untidyness, the necessity for limewashing, offensive odours, etc.

In four instances structural alterations of the premises were considered necessary.

All causes of complaint were rectified on the occupiers being approached by the Inspector, and generally speaking the businesses have been conducted in a satisfactory manner.

Bakehouses.

The domestic bakehouses are under the supervision of the Sanitary Department, but bakehouses where males are employed are supervised by the Veterinary Department ; there are 22 such bakehouses. No cause for serious complaint was found, but on six occasions occupiers had to be warned for general untidyness and the necessity for limewashing, and in one instance slight structural alterations were carried out.

Offensive Trades.

The following is a list of offensive trades in the City. There have been no complaints arising from these trades.

NATURE OF TRADES.

Tripe Dressing	4
Soap Works	2
Tanneries	1
Skin Dressers	1
Gut Scrapers	2
Total	10

SECTION V.

Pathological Laboratory Report.

The appended table shows a list of the examinations carried out at the City Laboratory and at Hope Hospital Laboratory during the year 1932. It shows an increase of over 30 per cent on the total number of investigations made during the previous year. This increase is due, partly to a larger number of diphtheria swabs being sent for examination, partly to a steady increase in the work done at Hope Hospital, and partly to an increase in the number of examinations carried out for the Venereal Diseases Department.

Miss L. Stent, M.D., Dipl. Bact., M.R.C.S., L.R.C.P., was appointed Assistant Pathologist in May and took up duties on 1st July. Most of Dr. Stent's time is taken up with the work at Hope Hospital, which is mainly done by her at present, and we have been fortunate in procuring the services of one whose experience, training, and capability fit her to do this, as the demands made on my time and services would have been lessened very little if a Junior Assistant Pathologist without extensive experience of Bacteriology and Pathology had been appointed.

Since the appointment of an Assistant Pathologist, an attempt has been made at Hope Hospital, in co-operation with Dr. Langley, the Visiting Physician, to investigate more thoroughly the numerous cases of pneumonia treated at the Hospital, with a view to establishing more efficient and accurate methods of early diagnosis, mainly in connection with typing the infecting organism, and also with a view to treatment later by serum therapy. The main drawback to serum therapy at present is that the price of serum used per patient is almost prohibitive.

At present the work at Hope Hospital is very much cramped for lack of room, so that it is impossible to carry out numerous extra investigations which should be done there. For a similar reason we are unable to employ any extra laboratory assistants there, though the need for them is urgent. A new and much larger laboratory is being equipped, however, so it is hoped that these shortcomings will be remedied in the near future.

With regard to the work done at the City Laboratory, Regent Road, the main extra work undertaken since the appointment of an Assistant Pathologist has been : –

(1) In accordance with the recommendation of the Ministry of Health all Wassermann examinations are confirmed by a Kahn test. This will mean an increase of approximately 5,000 serological tests per annum but is well justified, as it establishes the presence or absence of the disease upon a much surer basis.

(2) A new medium for isolation of the diphtheria bacillus from carriers (Horgan's modification of McLeod's medium) has been tried and found on the whole satisfactory. It is a definite improvement on the old standard medium for isolation of pure cultures, resulting in a considerable saving of time, labour and, incidentally, expense. As a result of the adoption of this new medium, all diphtheria carriers are now tested as a routine for virulence before sending them into hospital, and it is to be hoped that in this way a number of cases will be saved the trouble and expense of hospital treatment which otherwise could not have been avoided.

Particulars of Investigations Carried Out in the Pathological Laboratory during the Year 1932.

Nature of Investigations.	Ladywell Sanatorium.	Hope Hospital.	Veterinary Department.	Tuberculosis Department.	Venereal Diseases Department.	School Medical Department.	Maternity and Child Welfare Department.	General Practitioners.	Salford Royal Hospital.	P.A.D.	Totals.
Swabs for Diphtheria	7768	796	..	..	..	1921	10	2081	..	844	13420
Virulence Tests of Organisms	24	14	..	..	..	3	..	1	..	9	51
Vaccines	4	3	..	..	..	2	..	..	..	..	9
Sputa for T.B.	432	1333	..	741	..	..	..	584	..	..	3090
Milk Inoculations	..	..	399	..	..	..	..	..	..	..	399
Milk Counts	..	..	154	..	..	..	..	..	..	..	154
Milk Microscopic for Tubercle	..	..	68	..	..	..	..	..	..	..	68
Widal	15	20	..	..	..	..	..	12	..	..	47
Swimming Bath Water	..	..	..	..	..	20	..	..	..	..	20
Bacteriological and Cytological Examinations of Urine	47	485	..	..	..	..	..	7	..	..	539
Faeces	47	70	..	..	..	..	..	8	..	..	125
Hair for Ringworm	1	..	..	..	..	31	..	..	..	..	32
Blood-Anthrax	..	..	3	..	..	..	..	..	..	..	3
Wassermann	2	982	..	5	4061	1	10	220	479	..	5760
Kahn	..	327	..	1	1361	..	3	71	157	..	1920
Meinicke	..	9	..	..	..	..	..	4	7	..	20
Blood Cultures	3	451	..	..	..	..	..	..	..	..	454
Gonococci	..	118	..	..	..	14	23	..	..	..	155
Diagnosis Inoculations	1	47	..	3	..	..	..	5	..	..	56
Leucocyte Counts	..	33	..	..	..	..	..	..	..	..	33
Complete Blood Counts	2	149	..	..	..	..	..	..	..	..	151
Examination for Occult Blood	..	217	..	..	..	..	..	..	..	..	217
Autopsies	6	18	..	..	..	..	..	..	..	..	24
Cerebro-spinal Fluid	78	99	..	..	..	..	..	..	..	..	177
Histological Sections	..	210	..	..	..	..	..	..	..	..	210
Test Meals	..	217	..	..	..	..	..	..	..	..	217
Pus, Exudates, etc.	6	234	..	..	..	..	..	..	..	..	240
Blood Urea Estimation	..	137	..	..	..	..	..	..	..	..	137
Urea Concentration Tests	..	93	..	..	..	..	..	..	..	..	93
Blood Sugar	..	359	..	..	..	..	..	..	..	..	359
Disinfectants	..	..	..	..	..	5	..	..	..	..	5
Drinking Water	..	..	..	..	..	9	..	..	..	..	9
Hæmolytic Streptococci	9	7	..	..	..	..	..	..	..	..	16
Pleural Fluid	..	70	..	..	..	..	..	..	..	..	70
Sputum for typing pneumococcus	..	258	..	..	..	..	..	..	..	..	258
Van Den Bergh Reaction	..	20	..	..	..	..	..	..	..	..	20
Various	..	19	..	..	..	..	..	..	..	..	19
Totals	8445	6795	624	750	5422	2006	46	2993	643	853	28577

SECTION VI.

Report relating to the
City Analyst's Department.

During the year 1932, 2,889 samples were examined, of which 1,286 were taken under the Food and Drugs Act, 11 were Fertilisers and Feeding Stuffs, and 1,592 miscellaneous.

Thirty-seven samples of foods or drugs were certified as adulterated, and seven as of doubtful quality, making a total of 44 samples (3·4 per cent) certified as not genuine.

TABLE 1.

SAMPLES.	Number Examined.	Number Adulterated		Percentage of Adulteration.
		Preservatives Only.	Other Ways.	
Milk	885	—	15	1·7
Separated Milk	1	—	—	—
Cream (Tinned)	4	—	—	—
Cream Cheese	4	—	3	75
Full Cream Cheese	1	—	1	100
Cheshire Cheese	11	—	1	9·1
Cheese (other varieties)	17	—	—	—
Butter	19	—	—	—
Lard	9	—	—	—
Cheese and Tomato Paste	1	—	—	—
Beef Suet	11	—	1	9·1
Tea	9	—	—	—
Coffee and Chicory Extract	1	—	—	—
Coffee	9	—	—	—
Cocoa	10	—	—	—
Self Raising Flour	21	—	—	—
Cornflour	4	—	—	—
Arrowroot	3	—	—	—
Rice	5	—	—	—
Ground Rice	4	—	—	—
Baking Powder	2	—	—	—
Sausage	9	2	—	22·2
Sausage Seasoning	1	—	—	—
Salt	2	—	—	—
Tinned Peas	1	—	—	—
Sauce	7	—	—	—
Pickles	4	—	—	—
Tomato Ketchup	3	—	—	—
Walnut Ketchup	1	—	—	—
Gravy Browning	1	—	—	—
Ground Ginger	5	—	—	—
Ground Almonds	5	—	—	—
Jam	46	—	3	6·5
Syrup	1	—	—	—
Candid Peel	6	—	—	—
Raisins	8	—	1	12·5
Prunes	3	—	—	—
Dried Apricots	2	1	—	50
Mixed Dried Fruit	2	—	—	—
Glace Cherries	5	—	—	—
Table Jelly	5	—	—	—
Orange Squash	1	—	—	—
Lemon Squash	1	—	—	—
Lemonade Crystals	3	—	—	—
Chocolates	2	—	1	50
Sweets	1	—	—	—
Thyme	1	—	—	—

TABLE I.—*Continued.*

SAMPLES.	Number Examined.	Number Adulterated.		Percentage of Adulteration.
		Preservatives Only.	Other Ways.	
Parsley	1	—	—	—
Marjoram	1	—	—	—
Sage	1	—	—	—
Epsom Salts	7	—	—	—
Glauber Salts	10	—	—	—
Rochelle Salts	3	—	—	—
Gregory Powder	5	—	—	—
Compound Liquorice Powder	4	—	—	—
Castor Oil Pills	1	—	—	—
Nerve and Digestive Tablets	1	—	1	100
Compound Extract Tablets	1	—	1	100
Quinine Sulphate Tablets	4	—	—	—
Ammoniated Quinine Tablets	2	—	1	50
Ammoniated Tincture of Quinine	5	—	—	—
Ammonia	3	—	—	—
Cod Liver Oil and Malt Extract	8	—	—	—
Cod Liver Oil Emulsion with hypophosphites	8	—	4	50
Cream of Tartar	10	—	—	—
Tartaric Acid	5	—	—	—
Borax	11	—	1	9·1
Boric Acid	5	—	—	—
Tincture of Iodine	10	—	—	—
Paregoric	5	—	—	—
Olive Oil	5	—	—	—
Whiskey	7	—	—	—
Rum	3	—	—	—
Gin	3	—	—	—
	1,286	3	34	2·9

Table 1 gives details of the samples examined under the Food and Drugs Act. The total number of samples represents a purchase of 576 samples per hundred thousand of the population. It will be seen that 37 have been returned as adulterated, a percentage of 2·9 of the total. Comparative figures for adulteration in previous years are given in Table 2.

TABLE 2.

	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
Percentage of Adulteration	6·9	4·3	7·7	4·5	4·3	4·7	3·0	3·2	3·3	2·9
Total Samples .	1388	1544	1396	1387	1452	1484	1491	1556	1445	1286
Formal Samples	644	775	752	765	744	733	727	598	574	462
Informal ,,	744	769	644	622	738	751	764	958	871	824
No. of Samples per 100,000 of the population	577	641	572	563	593	593	596	622	642	576

The division of the samples into two classes in the foregoing table, viz.: formal and informal, shows the number of samples whose purchase complied with the formalities of the Act. These formalities in particular concern the division of the sample into three parts, sealing and leaving one part with the vendor, who must be warned that the purchase has been made for the purposes of analysis under the Act. No prosecution can arise except in the case of such a formal sample. The purposes of inspection are well served by buying samples informally, in many cases saving time and trouble, and in some cases, annoyance on the part of the shopkeeper. No distinction is made between formal and informal samples in the care or details of their analysis.

Milk.

Out of 885 samples of milk examined, only 15, that is 1·7 per cent., have been certified as not genuine. Table 3 shows the percentage adulteration of milk during the last 12 years :—

TABLE 3.

ADULTERATION OF MILK, SALFORD.

	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
Number of Samples.	899	923	779	833	921	994	1028	1103	1100	1106	1003	885
Percentage of Adulteration.	8·9	5·3	5·4	2·6	4·7	2·5	2·1	3·9	2·5	3·3	2·1	1·7

The fall in percentage of milk samples adulterated in recent years is a matter for congratulation. These figures are interesting and especially so when compared with the national figures for the same period.

TABLE 4.

MILK ADULTERATION, ENGLAND AND WALES.

Year.	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
Per cent Adulteration ..	8·6	7·7	7·8	7·7	8·3	7·4	6·9	8·2	7·8	6·6	6·4	Not available.

It will be seen that there has been, throughout the country during the past decade, a progressive drop in the percentage of samples adulterated. This may be attributed to a higher standard of honesty in producers and dealers brought about perhaps in part by the cumulative effect of years of enforcement of the Food and Drugs Act. Since 1926, the percentage adulteration in Salford has been about half the national figure, and it is suggested that there are two reasons for this. In the first place efficient inspection has resulted in a general betterment. Your Inspector has, with tact and courtesy, encouraged milk dealers to take a more enlightened interest in the quality of their wares, and many of them have been brought to realise the advantage of consulting this department in cases of doubt or difficulty. There is another cause which is to some extent peculiar to Salford. A comparatively large portion of the trade within the City is in the hands of a small number of large firms. These firms are each selling the mixed milk of many farmers. Adulterated milk from one farm, when added to such a large bulk, may escape detection, since it would effect but little lowering of the average quality. In any case, since the headquarters of these firms are not in Salford, it is impossible for your Inspector to sample the quality of the milk these firms are receiving from the farms (that is, to take samples " in course of delivery "). Such samples are no doubt taken by the Local Authority concerned, and in an efficient manner with the consequent detection of adulteration if it should occur ; the point is that this cannot be indicated in the percentage adulteration figures for Salford.

The Report of the Reorganisation Commission for milk has recently been published (Ministry of Agriculture Economic series No. 38). This deals, of course, with the economic side of the marketing of milk. It contains a great deal of interest to Local Authorities, but these matters will be chiefly the concern of the Veterinary and Bacteriological Departments. Two points are raised, however, which directly concern the Food and Drugs Act, and, therefore, the Public Analyst. In para. 42 the following appears :—

> 42. THE SALE OF MILK REGULATIONS, 1901.—Apart altogether from the question of hygienic quality, there is no statutory definition of milk. The Sale of Milk Regulations, 1901, made under the Sale of Food and Drugs Act, 1899, provide that milk which is proved to contain less than 3 per cent of fat or 8·5 per cent of non-fatty solids is presumed to be adulterated. The cow herself, however, can rebut

> this presumption, for if, on "appeal to the cow," the bulk proves to be of the same inferior quality as the sample, it is held to be proved that the sample was not, in fact, adulterated. The existence of this presumptive standard, however, does not, and should not, prevent the producer from giving a guarantee of quality, whether relating to cleanliness or composition, as part of his contract with the consumer. There are, however, certain aspects of the present law which appear to us to involve a certain amount of hardship to producers and distributors of milk. In particular, we would refer to the fact that, under the Food and Drugs Adulteration Act, 1928, the sale of adulterated milk is a quasi-criminal offence, and the seller must be convicted, even though it is proved that he was neither responsible for, nor aware of, the adulteration. Many local authorities make it a practice before prosecuting to investigate fully all the circumstances which might have affected the question whether the offence was intentional or not, but this practice is not universal, and even where it is followed, there is no absolute guarantee against the prosecution of an innocent person. The law, as it stands, does not distinguish between the wilful adulterator and the unwitting victim of circumstances. The penalty that may be imposed on conviction is in no sense a deterrent to the fraudulent adulterator : but, on the other hand, the honest man whose cows happen to have given milk of low quality is subjected to the indignity of a charge that suggests dishonesty.

The ideas in this paragraph are not new ; we have been hearing them from different sources and for several years now. For readers who are meeting them for the first time, it may be as well to translate the meaning of them into somewhat simpler words. A milk dealer or a farmer is prosecuted by a local authority because his milk is below standard. He appears in court charged with a criminal offence, and if he is convicted, he is, say the exponents of this theory, "branded as a felon," and this, they say, is hard on him when perhaps the fault is not his own. At first sight the proposition is seductive, and many admirers may be attracted as by the sweet singing sirens of mythology. It behoves us to remember how Ulysses stopped his ears with wax and kept his ship on its true course.

Your Analyst, writing with some experience of the adulteration of food, and of the administration of this Food and Drugs Act, is convinced that false and pernicious doctrine lurks in this paragraph of the Commission's Report, and though it may take a little time and space to expose it, he considers it extremely important that the other side of the question should be stated.

In the first place, enquiry must be made as to what the opponents of "quasi criminal offence" propose to give us in its place. This will be by no means obvious to many readers of the Report of the Reorganisation Committee. In the absence of details, the writer, who has been in touch with this controversy since its beginning, can only give his own account of the proposed alternative with every care to make it as fair and accurate as he is able. We are afforded a clue as to what was in the Commission's mind by the statement ". . . The existence of this presumptive standard, however, does not, and should not, prevent the producer from giving a guarantee of quality, whether relating to cleanliness or composition, as part of his contract with the consumer." Those familiar with this subject will recognise in this sentence an allusion to the idea of "civil liability" which has been introduced into the last Fertilisers and Feeding Stuffs Act in 1926. Under this Act, similar in many of its principles to the Food and Drugs Act, samples of fertilisers and feeding stuffs may be taken by the Inspector. In the event of serious adulteration or deficiency, and with the approval of the Ministry of Agriculture, proceedings may be instituted against the seller by the local authority in a manner not unlike that of the Food and Drugs Act. These proceedings are "quasi criminal." In addition the Act imposes further conditions aimed at protecting the buyer. It lays down that sellers must guarantee to the buyer a certain standard of quality in the article sold, and in the event of the article falling below the standard there exists a civil liability for the deficiency upon the part of the seller. This principle may be understood better with the aid of a concrete example. Let it be supposed that the sale is of a bone meal fertiliser. The Act requires the seller to inform the buyer what percentages of nitrogen and phosphoric acid (these are the valuable manurial ingredients in such a fertiliser) his product contains. This information he must give with the invoice, or in some other manner approved by the Act. The buyer is now entitled, within 14 days of delivery, to require the official sampler under the Act for his area to take a sample and submit it to the analyst. Thus, for a purely nominal fee, (usually a few pence) he is able to test the guarantee of the buyer. Suppose the seller guarantees four per cent. of nitrogen and 19 per cent. of phosphoric acid, and that the article turns out to contain three per cent. of nitrogen and 15 per cent. of phosphoric acid. Obviously it is not such good manure as the farmer thought when he bought it, and the Act renders the seller liable to the farmer for the difference, that is one per cent. of nitrogen and four per cent. of phosphoric acid. The case may be settled privately by the parties, by the seller giving the farmer an agreed sum for the deficiency. Failing this, the farmer can sue the seller in civil courts—and this is where the civil liability comes in—for the difference.

Having tried faithfully to deal with civil liability as we have it in the Fertilisers and Feeding Stuffs Act, it now becomes necessary to consider its application to the sale of milk as well as to examine the arguments put forward in the paragraph quoted from the report. It is worth remembering that the Food and Drugs Act, under which the Sale of Milk Regulations are made, is "an Act to make better provision for the sale of food in a pure state." Neither should it be forgotten that anyone who deliberately skims or waters milk is performing a criminal act and a particularly mean one, nor that it is such a felon that the provisions of the Act are designed to punish with a penalty which cannot exceed £20 for the first offence. People of sympathetic nature who may be moved to consider that the Food and Drugs Act requires amendment for the reasons in the last sentence of the quoted paragraph, should not forget that there is another side to the question, and that the consumer whose milk is impoverished by a wanton criminal act is also deserving of sympathy. The consumer is usually the last to receive sympathy, and it is very much open to doubt if his interests even receive adequate consideration as a rule, since he is not represented by any body so compact, wealthy and powerful, as the various trade organisations which so ably and persistently press the interests of trader and producer upon the notice of the public, and upon such bodies as the Departmental Committee of Enquiry. This applies of course, to all articles of consumption, and not only to milk. The consumer is, in fact, entitled to sympathy if he received poor milk which was poor because the cow herself gave milk of low quality, and which had not been impoverished in any way by skimming or watering. It is a matter of greater public moment that the quality of milk should be maintained or improved than that excuses should be found for the producer or vendor of inferior milk. These are the opinions of one who has an extreme dislike of prosecution as an instrument for maintaining the necessary standards of foodstuffs, and a particular horror of putting an innocent man under such an indignity. During the past four years, exactly 100 samples of milk have been reported as adulterated in Salford, and during the same period, only nine persons have been prosecuted in respect of fourteen of these samples. These figures are quoted in the hope that the reader will be convinced that the writer holds no bias against producers and retailers, and in favour of the consumer, although the duty laid on him by the Act may be roughly described as concerned with the protection of the consumer.

Since the report of the Commission contained the suggestion that the honest man, whose cows happen to have given milk of low quality, may be "subjected to the indignity of a charge which suggests dishonesty," it seems at this stage not out of place to give a description of the normal steps taken by this Department in dealing with an adulterated sample of milk. The reader, aware of the precautions taken before a summons is issued, will then be left to judge for himself as to the chances of such a happening. It is well to bear in mind the average composition of milk. The following figures (taken from the Annual Report for 1930) show the average obtained for the previous 16 years from the examination of nearly 14,000 samples in Salford. They are slightly lower than the probable general average for the whole country.

	Fat.	Solids not Fat.
Average composition of milk samples in Salford .	3·63	8·82
Minimum presumptive limits	3·00	8·50

Thus, before an average sample of milk can be presumed to be skimmed at all, it will have to be deprived of one-fifth of the butter fat it contained, and not until it contains four per cent. of water can it be presumed to be watered. In general, this Department allows a further margin upon the Sale of Milk Regulations figures with the result that no prosecution is instituted for skimming, unless the sample is 25 per cent below the average or for watering unless the amount is at least 8½ per cent calculating on an average composition.

The sampling officer is at great pains to trace the offence to its source. If the original adulterated sample was obtained from A who gets his milk from B, the wholesaler, B's milk will next be sampled. This process is carried right back to the cow in every case where it is necessary, and several visits may, in fact, be paid to the farm, the cows being milked in the Inspector's presence. Thus, it is no uncommon thing for a dozen or more samples to be taken in following up one suspicious sample. In the analysis of suspected samples the same extreme care is shown. The routine analysis of a genuine milk will certainly not take one operator more than half an hour. Where the sample appears to be adulterated, the routine analysis is repeated by another assistant. In addition, about half a dozen other analytical processes are employed which are much more delicate and time consuming. These processes are directed to detecting any possibility of the milk being a poor sample of abnormal quality, and to obtain confirmation by every available method of the results obtained. These processes are normally performed in duplicate by different assistants, whose work is personally supervised by the City Analyst. The time devoted to any suspicious sample which could possibly be the subject of a prosecution will be not less than three hours, and may be more.

In addition to this, the Inspector and Public Analyst separately and together endeavour to place themselves in the farmer's position, and to consider all possible (and many impossible) explanations from his point of view. It is not until they have reached this stage without any excuse for the facts being found that the possibility of a prosecution first arises. While the Department prides itself on taking every possible precaution it lays no claim to any outstanding merit in this direction. The writer personally knows of many other public analysts who take no less pains in the farmer's interest.

The Report of the Milk Reorganisation Commission suggests that since the present system makes it possible for a farmer to be prosecuted for the delinquencies of his cows which he cannot control, this system should be changed. Readers of the foregoing may form some ideas of what the possibilities are, and it remains to consider how the idea of " civil liability " could be applied to the law regarding the sale of milk.

In the Fertilisers and Feeding Stuffs Act, civil liability has, up to now, proved a complete failure. Reasons for this are, (1) ignorance on the part of the consumer (i.e., of the farmer). The ignorance is two-fold, first, ignorance of the actual legal provisions, and second, ignorance of the scientific ideas involved. No slur is intended on the farming community, the point of this argument is that were similar provisions applied to milk the consumer (i.e., the general public) would be many times more ignorant. (2) Where the farmer is aware of the provisions of the Act, he does not avail himself of them. There are various reasons for this amongst which may be cited laziness, a doubt as to whether the whole thing is worth it, and two very British characteristics, trust of the other fellow, and a dislike of any action which suggests setting a detective to watch him. The initiative rests with the consumer, and if he fails to take it, the provisions of the Act automatically become a dead letter. Obviously enough, the principle of civil liability could not be applied in an exactly similar manner to the sale of milk. That it would be a complete fiasco is a very safe prophecy. No one could bear the thought of a guarantee of quality being given in the form of an invoice with every sale of milk, and the thought of leaving the initiative of the taking of samples to the consumer is equally ludicrous. Presumably the idea of the exponents of this theory is that there should be an implied contract with the sale of milk. Every time milk was sold it would be implied that there was a certain minimum percentage of fat and solids not fat, and the Inspector would be given powers to set the process of civil liability in motion, as if he were an ordinary purchaser, that is, to take samples, to submit them to the analyst, and in case of deficiency, sue on behalf of the local authority for a sum which would have to be regarded as due to him or to the authority. Such a scheme would certainly make the judicious adulteration of milk a more profitable business. The Inspector usually buys a pint sample. With milk at 3d. per pint, he would be entitled to three farthings compensation if the sample contained 25 per cent. of water. This would be regarded as a debt due to the Inspector from the seller, which the former could recover in a civil action, but there could be nothing to prevent the seller bringing three farthings to the Inspector when the whole affair would be closed without anyone being the wiser. The smallness of the penalty and the possibility of its being paid in private are in the opinion of the writer, fatal objections. There is no doubt that in prevention of adulteration of food, it is publicity which is the great and only effective deterrent. A large firm could laugh at any penalty even under the present system, but the damage done to its trade by the publication in the papers of the details of the sale of an adulterated article may be a very heavy punishment indeed, (this is indeed, a fact which the department always considers very carefully before commencing a prosecution. Always bearing in mind that the consumer must be protected, it is necessary to avoid the possibility of action resulting in infliction of punishment out of proportion to the crime.) The ordinary tradesman of the type of the ordinary small retailer finds the police court a deterrent, because of two other common British characteristics, respect of the law, and a love of respectability. His presence in court in answer to a summons generally produces a real sense of shame in him.

The opponents of the present system say that it is their desire to spare an innocent man such an ordeal. Your Analyst is firmly convinced that such an occurence is so unlikely that it need not be considered, and in any case the court is always prepared to give him fair play, and to record a verdict which will leave no stigma upon an innocent man. He may add that he has always found newspaper reporters most conscientious and anxious that their press reports shall not censor a trader unless he deserves it.

In attempting to sum up, the writer would record a profound conviction that at least equally important as the law is the method of its administration. The present law is, in his view, administered in a way which practically excludes the injustice which the Milk Reorganisation Commission seems to dread, and if local authorities exist where this is not so he believes that the remedy lies in the improvement of local action, and not in the adoption of civil liability. Such improvement could easily be effected by a circular letter or other action of the appropriate Minister. The principle of civil liability would, in his view, not only fail to prevent adulteration, but would be a tremendous incentive to the judicious adulteration of milk which it would render a very profitable business owing to the wholly inadequate penalties and the suppression of publicity. He is not so presumptuous as to expect that his own view will be accepted in preference to that of the Milk Commission. If it is only recognised that the whole subject is extremely controversial and that the principle of civil liability should not be substituted for, or superadded to, the present system without the most careful enquiry, he will be satisfied, and will be content to abide by the verdict of such an enquiry.

Reference is made on page 20 to the Commission's proposals as to standards for cream.

The monthly variations in the quality of all the milk samples examined are shown in Tables numbers 5, 6 and 7.

TABLE 5.

AVERAGE COMPOSITION OF ALL MILK, 1932.

Month.	Number of Samples.	Total Solids per cent.		Fat per cent.		Solids not fat per cent.	
January	77	12·40	12·37	3·49	3·47	8·91	8·90
February	90		12·47		3·54		8·93
March	71		12·33		3·45		8·88
April	33	12·34	12·37	3·46	3·52	8·88	8·85
May	68		12·43		3·54		8·89
June	106		12·28		3·39		8·89
July	53	12·46	12·21	3·58	3·37	8·88	8·84
August	85		12·35		3·52		8·83
September	82		12·75		3·77		8·98
October	87	12·58	12·66	3·64	3·68	8·94	8·98
November	58		12·57		3·64		8·93
December	75		12·49		3·58		8·91
	885		12·44		3·53		8·91

TABLE 6.

Average Composition of Farmers' Milk, 1932.

Month.	Number of Samples.	Total Solids per cent.		Fat per cent.		Solids not fat per cent.	
January	22	12·54	12·39	3·57	3·48	8·97	8·91
February	31		12·61		3·61		9·00
March	6		12·76		3·75		9·01
April	22	12·49	12·53	3·58	3·66	8·91	8·87
May	21		12·74		3·74		9·00
June	45		12·34		3·46		8·88
July	25	12·58	12·27	3·71	3·51	8·87	8·76
August	38		12·54		3·67		8·87
September	27		12·90		3·95		8·95
October	11	12·66	12·92	3·70	3·90	8·96	9·02
November	22		12·77		3·74		9·03
December	33		12·51		3·61		8·90
	303		12·56		3·64		8·92

TABLE 7.

Average Composition of Milk other than Farmer's Milk. 1932.

Month.	Number of Samples.	Total Solids per cent.		Fat per cent.		Solids not fat per cent.	
January	55	12·35	12·35	3·47	3·48	8·88	8·87
February	59		12·41		3·51		8·90
March	65		12·28		3·42		8·86
April	11	12·24	12·06	3·37	3·25	8·87	8·81
May	47		12·27		3·44		8·83
June	61		12·23		3·34		8·89
July	28	12·40	12·15	3·50	3·25	8·90	8·90
August	47		12·20		3·40		8·80
September	55		12·67		3·69		8·98
October	76	12·56	12·63	3·61	3·65	8·95	8·98
November	36		12·45		3·58		8·87
December	42		12·47		3·56		8·91
	582		12·39		3·49		8·90

Table 8 gives comparative figures from the reports of other Public Analysts, and shows the average composition of the milk samples in Salford for the period 1914 to 1932.

TABLE 8.

Place.	Number of Samples.	Total Solids per cent.	Fat per cent.	Solids not fat per cent.
Salford 1932	885	12·44	3·53	8·91
Birmingham 1932	2,638	12·41	3·63	8·78
Lancashire 1932	3,205	12·62	3·77	8·85
Kent 1932	1,714	12·58	3·69	8·89
Kingston-upon-Hull .. 1932	941	12·47	3·63	8·84
Average, Salford, 1914-1932	15,848	12·46	3·63	8·83

The samples of milk included 146 taken at Hope Hospital, 42 at Ladywell Sanatorium, 12 at the Maternity Home, and 14 at Nab Top Sanatorium. The average quality of these samples was :—

	Total Solids per cent.	Fat per cent.	Solids not fat per cent.
Hope Hospital	12·34	3·54	8·80
Ladywell Sanatorium	12·64	3·65	8·99
Maternity Home	12·67	3·69	8·98
Nab Top Sanatorium	12·49	3·55	8·94

Table 9 contains a list of the adulterated samples of milk, together with the action taken in regard to each sample.

TABLE 9.

No.	Nature of Adulteration.	Action Taken.	Remarks.
5102	Deficient 3·3% fat	Kept under observation	Farmer.
5216	Deficient 3·3% fat	Kept under observation	Shopkeeper.
5230	Deficient 3·3% fat	Kept under observation	Further samples genuine.
5231	Deficient 3·3% fat		
5368	Deficient 16·7% fat	Kept under observation	Bottled Milk, further samples genuine.
5374	Deficient 6·7% fat		
5504	Deficient 6·7% fat	Kept under observation	Farmer, further samples genuine.
5529	Deficient 13·3% fat	None.	Appeal to Cow.
5531	Deficient 6·7% fat		Farmer supplying above.
5540	Deficient 3·3% fat	None	Institution sample, 15 others genuine.
5621	Deficient 2·3% solids not fat	Kept under observation.	Farmers, further samples genuine.
5622	Deficient 2·3% solids not fat		
5627	Deficient 3·5% solids not fat		
5666	Deficient 10% fat	Fined £2 10s. 0d.	Bottled Milk retailer.
6183	Deficient 11·7% solids not fat	Fined £3 3s. 0d.	Farmer.

Sample No. 5,102 was deficient of 3·3 per cent of fat. Further samples of the same farmer's milk proved to be of good quality and no further action was taken.

Sample No. 5,216 was deficient of 3·3 per cent of fat. Several poor, but apparently genuine samples had previously been obtained from this vendor. Upon further sampling, no more adulterated samples were received.

Samples Nos. 5,230 and 5,231 were both deficient 3·3 per cent fat. Further samples were genuine, and no action was taken.

Sample No. 5,368 was a sample of bottled milk from a retailer, and was deficient of 16·7 per cent of fat. A sample from the wholesaler and bottler supplying him was genuine, but a sample from the farmer supplying the wholesaler (No. 5,347) was deficient of 6·7 per cent of fat. Other samples taken subsequently from the farmer were genuine, but only slightly above the legal limit. The supply improved under observation.

Sample No. 5.504 was a sample taken on delivery from a farmer to a dairyman as a result of a complaint from the latter. Further samples proved to be genuine.

Samples Nos. 5.529 and 5,531. The first sample, 13·3 per cent deficient in fat, was bought from a retailer. No. 5,531 was a sample from the farmer supplying him, and since this was also deficient of 6·7 per cent fat it appeared impossible to take any action.

Sample No. 5,540 was one of fifteen samples of milk supplied to a Salford Institution. Since the sample was only slightly (3·3 per cent) below the legal standard, and the other fourteen samples were of exceptionally good quality, no further action was taken.

Samples Nos. 5,621, 5,622 and 5,627 were all examples of slight deficiencies, and the supplies improved when further samples were taken.

Sample No. 5,666 was from a bottler who bottles his own milk. The farmer's milk supplied to him was of good quality.

A summons was issued against the bottler and he was fined £2 10s. 0d.

Sample No. 6,183 had the composition fat, 3·5 per cent solids not fat, 7·5 per cent This was a badly watered sample taken on delivery from a lorry. The Sale of Milk Regulations lays down a minimum presumptive limit of 8·5 per cent for solids not fat, and comparison of this with the actual amount present in the sample shows the presence of not less than 11·7 per cent of added water. Of course, if the milk originally contained more than 8·5 per cent of solids not fat (and such is usually the case at the time of the year when this sample was taken) correspondingly more water must be added to reduce the figure to 7·5 per cent. The freezing point of the sample actually indicated the addition of 18·4 per cent of water.

The farm was visited on the same evening, and your Inspector obtained a sample of very good milk direct from the cows (fat, 4·2 per cent, solids not fat, 9·2 per cent). It is interesting to notice that the amount of water which it would be necessary to add to this sample to reduce it to the quality of sample No. 6,183 (i.e., to bring down the solids not fat from 9·2 to 7·5 per cent) is 18·5 per cent. This figure is in exact agreement with that obtained by the freezing point test and is an example of the value of the latter test. The farmer was summoned and fined £2 2s. 0d., and £1 1s. 0d. costs. His defence was that a small hole in one of his churns had escaped his notice, and that the water must have got into the milk when this churn was placed in a trough of water for cooling.

Table 10 shows a list of samples other than milk found to be adulterated and the action taken with regard to each sample.

TABLE 10.

No.	Description.	Nature of Adulteration.	Remarks.
4895	Stoneless Damson Jam	Deficient 21% fruit.	Fined 5s. summons against makers dismissed
4936	Stoneless Damson Jam	Deficient 30% fruit	Informal sample, see 5078.
5028	Chocolate Easter Eggs	Chocolate covering contained 40% hardened coconut oil and 20% maize starch.	Caution.
5078	Stoneless Damson Jam	Deficient 21% fruit	Formal sample, warranty defence, case dismissed.
5224	Cheshire Cheese	Deficient 7% fat on dry matter.	Probably not Cheshire cheese at all. Informal sample. Formal sample could not be obtained.
5307	Nerve and Digestive Tablets	Claimed potassium iodide as ingredient. None present . . .	Makers agreed to give correct label.
5308	Compound Extract Tablets	Label claimed berberine sulphate as ingredient, none present	Makers agreed to give correct label.
5404	Ammoniated Quinine Tablets	Deficient 60% ammonia	Makers altered formula to give correct tablet.
5448 5452 5454 5522	Cod Liver Oil Emulsion with Hypophosphites	Deficient 80% hypophosphites . Deficient 80% hypophosphites . Deficient 80% hypophosphites and 50% oil. Deficient 75% hypophosphites .	Mkrs. altered label ditto. Mkrs. altered label and formula. Mkrs. altered label.
5638	Sausage	Contained 166 pts. per million sulphur dioxide. No declaration	Caution.
5639	Sausage.	Contained 192 pts. per million SO^2. No declaration	Caution.
5735	Borax	Contained 10 pts. arsenious oxide per million	Caution.
5741 5777 5806	Cream Cheese	Consisted of a soft cheese of the Gervais type.	Word "Cream" withdrawn from label.
5939	Beef Suet	Contained excessive rice flour . .	Caution.
5999	Raisins	Contaminated with sawdust . .	Caution.
6064	Full Cream Cheese	Consisted of whole milk cheese .	Label altered.
6130	Dried Apricots	Contained 500 pts. per million excess SO^2	Caution.

In addition, the following samples have been reported as of poor or doubtful quality :—

4951	Blackcurrant Jam	Probably deficient of about 10% of fruit.
4999	Blackcurrant Jam	,, ,, ,, ,,
5032	Raspberry Jam	,, ,, ,, ,,
5036	Raspberry Jam	,, ,, ,, ,,
5079	Damson Jam	,, ,, ,, ,,
5081	Blackcurrant Jam	,, ,, ,, ,,
5051	Cheshire Cheese	46·8% water. Probably not genuine Cheshire cheese.

Cream.

Four samples of tinned cream were genuine, the fat content of three samples, viz., 28·5, 26·0 and 25·0, being slightly higher in each case than the declared amount on the label. The fourth sample contained 23 per cent of fat, and in this case the label bore no statement as to the amount.

Beyond the prohibition of preservatives there are no legal standards for cream. The following from the report of the Reorganisation Commission for Milk is noted with interest (paragraph 31). It refers, of course, to fresh cream.

> " In the absence of standards for butter fat content for cream the public is compelled to judge quality by the criterion of thickness. Owing to factors other than the butter fat content being associated with thickness, if only to a minor extent, this is by no means an infallible indication of quality, but no other test is available to the consumer. The supply is mostly of cream with a butter fat content of not less than 50 per cent . . . . little or nothing has been done to stimulate a demand for cream of lower butter fat content than that normally sold ; such a cream has a use in the diet, for example, with the breakfast cereals, for which thick cream is less suitable—and its relative cheapness would be an added inducement to its purchase. The prescription of a butter fat content related to a trade description of such cream would be a first step in giving the consumer greater confidence in this product and popularising its use."

Your Analyst has always held and expressed the view that standards for cream are necessary, and provided that the introduction of thinner cream were accompanied by standards as described, he is in agreement with the foregoing statement. The anomalies of the present position will be apparent to the reader. As the Commission state, the fresh cream sold in this country usually has 50 per cent or more of butter fat, and as the reader will see from the above four samples, which are quite typical of the average quality of tinned creams, the latter usually contain about half the amount. It is certain that very few purchasers of tinned cream are aware of the difference.

Butter.

Nineteen samples of butter were genuine. The Reichert Wollny numbers of the fat of these samples varied between 23·2 and 34·2. The highest percentage of water noted during the year was 15, and the lowest 11·0. Butter containing more than 16 per cent of water is, under the Sale of Butter Regulations, 1902, presumed to be adulterated.

Lard and Suet.

The nineteen samples of lard received were all genuine. Your Inspector also bought eleven samples of shredded suet during the year. Shredded suet is prepared by melting suet and freeing it from tissue, after which it is forced through a perforated plate. The long strings have flour blown on to them and are then cut by revolving knives. This is a perfectly legitimate article of commerce, and is undoubtedly a handy way of buying suet. The flour, which is usually rice flour, serves the purpose of preventing the small pieces sticking together. Experience has shown that 10 per cent of flour is perfectly adequate for this purpose, and a large excess of flour certainly represents adulteration. The Society of Public Analysts has published what it regards to be a minimum amount of fat which these products should contain. Its figure of 83 per cent is certainly a fair one, possibly erring on the side of leniency, and allowing for about 15 per cent of flour. In ten of the samples the percentage of beef fat ranged from 83 to 90·8. The remaining sample contained about 80 per cent. Analyses of two different ends of the packet gave 81·3 and 77·7 per cent. A certain margin for manufacture and packing must obviously be allowed in such a product as this, but the Society of Public Analysts' figure includes these allowances. A cautionary letter was sent to the manufacturers of this sample. The general range of the refractive indices of the fat at 40° C. was 1·4577 to 1·4585 (ten samples). One sample had a refraction of 1·4560. The iodine value of the fat in this case was 34·1.

Cheese.

Thirty-three samples of cheese were received from your Inspector during the year. Of these, four were bought as cream cheese and eleven as Cheshire cheese. Altogether, five samples were reported as adulterated, and one as of doubtful quality.

Cream cheese Samples Nos. 5,741, 5,777 and 5,806, consisted of a soft cheese of the Gervais type and of very poor quality. Each sample was similar, containing 29 per cent of fat and 50 per cent of water ; the usual type of cream cheese in this country contains 80 per cent and upwards of fat. It seems reasonable to expect that cream cheese should be made from cream, as is indeed the practice in this country. A detailed analysis showed that at best it could not be made from a mixture of more than one part of cream with nine parts of milk. To-day makers of cream cheese in this country are selling a genuine cream cheese correctly labelled. Since this was a Continental cheese the makers were given the chance of altering their label before proceedings were instituted against them. In the first instance, the makers agreed to withdraw the label and cease using the term "cream cheese" in their publicity. They have since written through their solicitors arguing that they are entitled to describe this article as full cream cheese since, as they say, this term is widely understood in the trade to mean a cheese made from whole milk.

It has been pointed out in reply that the real point at issue should be what the purchaser by retail would expect to receive for a soft cheese labelled "full cream cheese." Although no reply to this last letter has been received, observation has shown that the sale of this article as cream cheese or full cream cheese has ceased. It is the submission of this Department that the whole history of these samples well illustrates the need for

(1) Standards for cream cheese.

(2) Regulations controlling labelling designed to suppress misleading statements.

Cheshire cheese Sample No. 5,224 had the composition : fat 28 per cent, moisture 33·3 per cent. This informal sample was bought as Cheshire cheese, which always contains 45 per cent of fat or more on the dry matter. This sample, which contained 42 per cent of fat in the dry matter, was therefore deficient of 7 per cent of fat. It was undoubtedly not Cheshire cheese, and probably consisted of Dutch cheese made from skimmed or partly skimmed milk. A formal sample could not be obtained.

Cheshire cheese Sample No. 5,051 contained 26 per cent of fat and 46·8 per cent of moisture, which means 49 per cent of fat on the dry matter. No samples of Cheshire cheese for the past five or six years have contained such a high percentage of moisture, and this sample was almost certainly not Cheshire cheese. It was impossible to obtain a formal sample of this cheese, but in view of the accepted 45 per cent of fat on the dry matter for Cheshire cheese, a prosecution in respect of such sample would not be certain of success.

Another attempt has been made to provide much-needed legislation for the marking of cheese and for cheese standards. A private member's Bill received its first hearing in February of this year (1933), but it is hardly expected to pass into law. Briefly, the Bill sought to define the terms "cream cheese," "whole milk cheese" and "skimmed milk cheese," and provided that the latter should be conspicuously marked. The last abortive attempt along similar lines was made in 1930.

Jam.

A fairly large number of jam samples have been analysed. Of the 46 samples received, three were regarded as not genuine, and six as of doubtful composition. After a close study of the present position, your Analyst has reached the conclusion that both the present so-called "standards" for jam and the analytical methods available for its examination leave a good deal to be desired.

The jam standards are an effort on the part of the Food Manufacturers' Federation, to which practically every jam manufacturer in the country belongs, to deal with the question of quality. After consultation with the Society of Public Analysts, the representatives of the jam panel of the Federation decided to define two qualities of jams. These are known as Full Fruit Standard and Lower Fruit Standard. The following table and notes shows the details of these qualities. What the Federation has done in effect is to say that any jam labelled as either Full or Lower Fruit Standard will conform at least with the minimum requirements of the definitions.

Kinds of Jam.	Minimum weight of fruit in 100 lbs. of jam.	
	Full Fruit Standard. lbs.	Lower Fruit Standard. lbs.
Rhubarb	45	20
Cherry	45	20
Strawberry	42	20
Red Gooseberry	40	20
Greengage	40	20
Victoria Plum	40	20
Red Plum	40	20
Apricot	40	20
Peach	40	20
Raspberry	38	20
Damson	38	20
Blackberry	38	20
Loganberry	38	20
Green or Golden Plum	35	20
Green Gooseberry	35	20
Red Currant	35	20
Blackcurrant	30	20
MIXED JAMS.		
Strawberry and Gooseberry	40 (20/20)	20 (10/10)
Gooseberry and Strawberry	40 (30/10)	20 (15/5)
Raspberry and Gooseberry	40 (20/20)	20 (10/10)
Gooseberry and Raspberry	40 (30/10)	20 (15/5)
Raspberry and Red Currant	40 (20/20)	20 (10/10)
Plum and Apple	40 (20/20)	20 (10/10)
Apple and Plum	40 (30/10)	20 (15/5)
Blackberry and Apple	40 (20/20)	20 (10/10)
Apple and Blackberry	40 (30/10)	20 (15/5)
Household or any other Jam not specified	40	20

NOTES.—1. Fruit juice or pectin. The presence of this must be declared on the label in the case of second quality jams. In first quality jams it may be added without declaration.

2. Acidity and Colour. Citric, malic or tartaric acids can be used without declaration "where the fruit used is deficient in acid." Permitted artificial colouring matter is also used without declaration.

This scheme is a voluntary effort on the part of the jam makers and it is to be regretted that unqualified praise cannot be given to it. The setting up of standards by the trade concerned is a sign of an enlightened interest on the part of the manufacturers, and as such, deserves sympathetic consideration ; it is a pity that in its details the scheme cannot escape criticism. There can be no doubt that the standards of first quality jams allow such a margin that many jams conforming to them (and which are actually labelled Full Fruit Standard) cannot be called first quality products by any stretch of the imagination.

Jam has been made by housewives for generations. When the large-scale manufacturer comes along, aided by the latest developments of science and manufacturing machinery, it is not unreasonable to expect of him that he should turn out at least as good an article as the housewife before he is entitled to call his product first quality. The recipes for home jam making are many and varied, but a pound of fresh fruit to a pound of sugar is a concise but not unfair summary of all of them. If we turn to the standards of the Food Manufacturers' Federation, we see that of the common jams, strawberry is at the top of the list and blackcurrant at the bottom. It is possible to calculate from the figures in the list, which represent pounds of fruit in 100 pounds of finished jam, how much fruit must be weighed out. In making Full Standard Fruit Jam, the manufacturer need take no more than two-thirds of the housewife's strawberries, nor more than half her blackcurrants. Worse still, he need not use fresh fruit; he can take pulped fruit that has lain in sulphite pickle for several years. He can provide the stiffness lacking, owing to the deficiency in quantity and quality of his fruit by use of " other fruit juices " or pectin derived from apples or other vegetable sources, and he can make up for his fruit acids with tartaric, malic or citric acids, and restore, by artificial dyes, the fruit colour lost in the sulphite pickle. All this in a first quality article and without a word on the label. It is not suggested that such a product is not wholesome, even nutritious, but it is strenuously denied that it is first quality.

The jam maker has not been slow to point out in his own defence that he has a number of difficulties to overcome which do not confront the housewife making jam at home. His fruit season is very short, so how is he to keep workmen and expensive plant occupied all through the year unless he may use pulped and preserved fruit ? He has to make a product which will keep for a fairly long period and withstand the conditions of transport which may carry his jar upside down on a road or rail journey. It would be unfair to the manufacturer not to bear such difficulties in mind, but it is very definitely unfair to the consumer to suggest that because of them the latter must receive an article labelled as of first quality when it is something else.

There can be no doubt that first quality in jam should mean an article made from fresh fruit and pure sugar only, and in approximately the proportions which the housewife uses. The present Full Fruit Standard would then be an admirable definition of second quality jams, and the Lower Fruit Standard for third quality. In speaking of the analysis of jams, it is a matter for regret that owing to the wide natural variations in the chief constituents in fruits, upon which the analyst must rely in his deductions, it is necessary to add a further liberal margin to a standard which is already too low. Research is being done at the present time by many specialists, and it is reasonable to hope that analysts will be provided with a more exact method of estimating the amount of fruit in jams.

Jam Sample No. 4,895 was deficient in fruit to the extent of 21 per cent. Four previous samples of this jam proved to be deficient in fruit to the extent of 34, 8, 13 and 18 per cent respectively. A summons was issued in respect of Sample No. 4,895, and at the hearing in the Salford Police Court on the 24th February, the vendors were fined five shillings. A summons against the makers for wilfully giving a false label was dismissed.

Jam Samples Nos. 4,936 and 5,078 were informal and formal samples respectively. The formal sample was found to be deficient of 21 per cent of fruit and a summons was issued in respect of this sample. At the hearing on April 8th, 1932, the vendors pleaded a warranty and the case was dismissed.

Chocolates and Sweets.

Two samples of chocolates and one of sweets were examined. Sample No. 5,028 was advertised as " Pure Chocolate Cream Easter Eggs." It consisted of a cream filling made of sugar, glucose and gelatine coated with chocolate, the thickness of the chocolate amounting to little more than a varnishing. The " chocolate " had to be removed by scraping and amounted to little more than one-twentieth of the sample. It had, however, a remarkable composition. About three-quarters of the fat, or 40 per cent of the sample, consisted of a hardened vegetable oil—probably coconut oil—and the remainder consisted of corn flour and cocoa husk.

In view of the relatively small amount of the adulterated part, the maker was asked to appear for interview. He was quite frank about the ingredients used, which he did not make himself. The fatty adulterant he bought as " confectionery butter," and this was, of course, the source of the hardened vegetable oil.

He accepted the view put forward by this Department, and he has given an undertaking that he will either coat the Easter eggs with genuine chocolate or cease using the word chocolate in connection with them.

Sausage.

Of the nine samples of sausage, two contravened the Preservative Regulations, in that they contained sulphite preservatives without any statement to this effect, or any notice in the shop. Sample No. 5,638 contained 166 parts, and No. 5,639, 192 parts per million of sulphites. Both were informal samples. When the Inspector returned to the shop a notice was displayed, which the manager informed him had been taken down by an assistant during his own absence. The manager was cautioned by the Inspector. Had the notice been displayed no offence would have been committed, since under such circumstances sausages may contain 450 parts of sulphite preservative per million.

Dried Fruits.

One sample of raisins, No. 5,999, was very dirty, containing a considerable amount of sawdust. While this did not render the sample harmful to health and could be removed by thorough washing, it was unnecessary and nasty. The shopkeeper was cautioned by your Inspector.

Sample No. 6,130 of dried apricots contained 2,500 parts of sulphite preservative per million. While the whole amount may not perhaps be very large, it is difficult to resist the conclusion that such an amount is the result, not of an attempt to add preservative, but of an effort to improve an inferior and darker product by the bleaching action of the sulphur dioxide. The Medical Officer of Health wrote to the firm concerned and an undertaking was received that the remainder of the consignment had been withdrawn from sale.

DRUGS.

Nerve and Digestive Tablets.

These tablets were manufactured in imitation of a well-known proprietary article, the *modus operandi* of the makers being to issue a pamphlet giving an analysis of the latter, together with the ingredients of their own product. With regard to this sample, both the advertising literature and the label claimed the following ingredients: Potassium iodide, phenolphthalein, calcium sulphate, talc and calcium carbonate. There appeared to be no potassium iodide whatever in the sample, and since this was, with the exception of phenolphthalein, the only ingredient of marked therapeutic value, the deficiency was serious. Incidentally it may be remarked that potassium iodide is a very expensive ingredient.

The manufacturers were asked to appear for interview and gave an undertaking that in future they would take steps to ensure that the labels of their products were in accordance with the composition. A period of six weeks was allowed in which to take the necessary measures.

Compound Extract Tablets.

This was another product of the makers of Sample No. 5,307. The label claimed the following ingredients: Cod liver extracts, reduced iron, zinc phosphide, berberine sulphate, oleoresin, ginger and powdered charcoal, etc. Berberine sulphate, easily the dearest of these ingredients, appeared to be totally absent. The makers, in an interview, agreed to label their products in accordance with the composition, and six weeks was allowed to make the necessary changes.

Ammoniated Quinine Tablets.

These tablets were labelled "one drachm," which could only be taken to mean that each tablet was equivalent to one drachm of ammoniated tincture of quinine, that is to say, each tablet should contain 1·1/11th grains quinine sulphate and 6/11ths grains of ammonia. The quinine content was nearly correct, but the tablets were over 60 per cent short of the correct amount of ammonia. Some trouble has been experienced by the makers of such tablets as these in preventing loss of ammonia on keeping; it is, however, possible to overcome this difficulty by careful packing. Having this in mind, the makers of the tablets were interviewed, when the reason for the deficiency became immediately obvious. The formula from which the tablets had been made had been calculated to give 1·1/11th grains of quinine sulphate and 0·545 grains of ammonium sulphate per tablet.

The latter quantity is the correct amount for the ammonia which should be present in each tablet. The opinion was expressed to the manufacturers that these tablets were not the equivalent to ammoniated tincture, not only on account of the deficiency in ammonia, but also because of its presence as a practically neutral salt. The manufacturers agreed to modify this formula to give a tablet as near as possible equivalent to ammoniated tincture of quinine. A revised tablet has been examined and found reasonably satisfactory.

Borax.

Sample No. 5,735 contained 10 parts per million of arsenious oxide. The limit is half this amount. Upon receipt of a cautionary letter the retail pharmacist returned the whole of his stock to the wholesaler. The amount of arsenic in this sample is not alarming. At the same time, it is quite possible to observe the standard of the Pharmacopœia, and in fact, the products of the best firms continue to contain only one part per million of arsenic or less. There has been noticeable a general tendency, taking the samples as a whole, towards a slight increase in the arsenic content, for of the samples passed as genuine, two contained five and one seven parts per million of arsenic. This product is being kept under careful observation.

Cod Liver Oil Emulsion with Hypophosphites.

Eight samples bought as Cod Liver Oil Emulsion with Hypophosphites have been analysed. One of these was actually labelled peptonised Cod Liver Oil Emulsion, and its composition corresponded with the B. P. C. Formula for this article. It was certified as genuine. The composition of the remaining samples disclosed such an interesting state of affairs that it is given below ·—

	Vol. of contents. Fluid ozs.	Price	Oil %	Total Hypophosphites %	Remarks.
		s. d.			
5448	7½	1 3	30·3	0·35	Label claimed 33% oil.
5449	6	1 3	23·5	0·3	Label : Oil 25%.
5450	5½	0 11	27·1	0·85	Composition agreed with label.
5452	6	1 3	32·5	0·3	Claimed 33% oil.
5454	12	1 6	25·8	0·3	
5522	3½	0 7	57·4	0·9	Label : 50% oil.
5619	2½	1 3	40	0·28	Proprietary brand.
SOME PUBLISHED FORMULÆ.					
British Pharmaceutical Codex			50	3·66	
National Health Formulary			50	3·66	
P.J.F. Acacia Emulsion			50	3·0	
P.J.F. Egg Emulsion			66	0·6	
P.J.F. Irish Moss Emulsion			50	1·14	

The recommended dose for adults was the same in each case, viz., one tablespoonful.

A perusal of this list shows at once that manufacturers have all agreed in modifying in some way the accepted formula, and it is a very striking fact that in every case this modification has resulted in the purchaser getting less of the chief medicaments. After interviewing a number of manufacturers, your Analyst still holds his original view that the formula of the Pharmaceutical Codex which has been followed by the National Health Formulary represents a reasonable and proper standard for this article. Some of the above samples had to be passed as genuine, since the analyses agreed with the label. Even this does not represent a very satisfactory state of affairs, since the composition was usually expressed in pharmaceutical Latin and on the least conspicuous part of the label. Even if the labels were read, only a pharmacist would appreciate the differences in quality. In interviewing the remaining makers, it was felt that the fairest course was to press for the Codex composition, and failing that, a proper disclosure on the label as to the actual amounts of oil and hypophosphites present. The various makers agreed to accept one or other of these alternatives. An attempt has also been made to arrive at a more general improvement by asking the National Pharmaceutical Union (representing the retail pharmacist) to take the matter up with the makers. A standard for this product would be in the interest of the consumer.

Fertilisers and Feeding Stuffs.

Nine samples of feeding stuffs and two of fertilisers were submitted. The composition of these samples was reasonably in accordance with the statutory statements given by the sellers.

TABLE 11.

MISCELLANEOUS SAMPLES.

Sunlight Tests	1,448
Rain Water	48
Water	4
Swimming Bath Water	2
Sulphur Gauges	10
Breast Milk	3
Dried Milk	2
Milk from Private Purchasers	2
Milk Jug Contents	1
Other Milks	11
Soap	9
Soap and Washing Powders	5
Fly Killer	2
Methylated Spirit	2
Polish	1
Paint	11
Paint Materials	3
Road Chippings	1
Beer	6
Edible Horse Oil	1
Miscellaneous Drugs	5
Police Samples	6
Coroner's Samples	4
Other Toxicological Samples	5
	1,592

The samples of swimming bath water, breast milk, fly killer and methylated spirits were received from the Health Department. The soaps were examined for the Health Department and Baths Department. The paints and paint materials (linseed oil, white lead and turpentine) were received from the City Engineer. The fly killer consisted of cresylic acid and nitrobenzene dissolved in paraffin oil. Two samples of milk were received from private individuals. One of these, which was suspected to be adulterated, was genuine; the other, which was described as having a peculiar taste, contained one per cent of sodium carbonate. The milk jug contents, found in a milk jug by a householder, consisted of urine. Of the six samples of beer, five were from a brewery for original gravity determination. The other sample of bottled beer, which was intensely violet, was coloured with an aniline dye of the nature of methyl violet. When the bottle, which had not been submitted for examination, was finally recovered and inspected, a small piece of copying ink pencil was found wedged at the bottom.

Six samples were submitted by the City Police. A bottle found on waste land contained vaccine. The other samples were connected with a case of supposed attempted suicide. They were five different powders, of which one was oxalic acid, two were Epsom salts, and two were Glauber's salt. The miscellaneous toxicological samples included the stomach washings of a child in hospital who was suspected of having obtained access to a bottle containing atropine; no atropine was present in the washings. A sample of urine from the V. D. Department was received with a request for examination for picric acid, which was not present. A small sample of port wine was submitted by a private individual as the probable cause of death of a prize dog. This was free from toxic quantities of arsenic, lead, copper, zinc, oxalates, ferrocyanides, ferricyanides, cyanides and fluorides. There was no evidence of fusel oil or of the products of acetous fermentation. Owing to the smallness of the amount available, the examination could not be carried further.

Another private individual submitted a sample of cough sweets which were alleged to have made her ill. Her description of the symptoms tallied exactly with those of arsenical poisoning. Neither arsenic nor any other poisonous ingredient was present in the sweets. The Maternity Department sent a sample of a liquid which was supposed to be syrup of pennyroyal which mothers of the poorer class were suspected of using to " soothe " their babies. No evidence of the presence of pennyroyal could be obtained.

The coroner's samples were part of the organs of a man who had been a stereotyper. He had a seizure in 1928, and was then pensioned by his employers. He died in November, 1932. The post mortem findings were cardiac degeneration supervening on general arterio-sclerosis, which the pathologist described as being consistent with natural causes or chronic lead poisoning. The organs contained lead in the following amounts:—Liver, 35; brain, 8; kidney, 8; tibia, 27 parts per million. This case is interesting, because of the lapse of four years between the last likely exposure to lead and the subject's death. Taking this into consideration, the amounts present in the body are very striking. The verdict of the coroner's jury was that the man died from chronic plumbism brought on by his occupation. A favourable impression was formed in course of the examination of the organs of the new method of Allport and Scrimshire (*Analyst*, 1932, **57**, 440) which was used alongside the usual processes.

Atmospheric Pollution.

1. Measurement of Sunlight.

This investigation commenced in 1926 and has been continued. The method which has been used during this period consists of the exposure of an acidified solution of potassium iodide, the amount of sunlight received being measured in terms of the amount of free iodine liberated by its action. Briefly, 10 c.c.s. of a two per cent potassium iodide solution and 10 c.c.s. of a 0·6 per cent solution of sulphuric acid are placed in a bottle, which is exposed to the direct light of the sun. At the end of each 24 hours the contents of the bottle are titrated with standard sodium thiosulphate solution, 1 c.c. of which corresponds to 1 milligram of iodine, and the results are expressed in milligrammes of iodine. The method has been fully described elsewhere (see Bagnall, *Analyst*, 1929, 54, 101), and certain criticisms of it have also been published (see *Analyst*, 1929, 54, 334).

The experiment has been continued at four stations:—On the roof of the Health Department in Regent Road, and in the grounds of the following Institutions: Drinkwater Park, Ladywell Sanatorium, and Nab Top Sanatorium, Marple. The table gives the monthly totals recorded (milligrammes of iodine).

TABLE 12.

Month, 1932.	Regent Road.	Nab Top Sanatorium, Marple.	Ladywell Sanatorium.	Drinkwater Park.
January	53·6	81·5	67·4	62·5
February	23·0	120·9	52·6	71·1
March	134·0	199·8	197·4	162·8
April	225·3	187·9	207·8	191·8
May	184·6	216·2	201·6	186·4
June	269·2	286·5	265·9	264·6
July	256·0	268·7	262·1	217·2
August	264·9	252·7	271·7	223·8
September	180·2	205·8	172·8	202·6
October	122·0	171·3	150·8	142·2
November	46·1	68·6	50·9	53·3
December	37·8	63·7	57·6	41·0
Yearly Totals, 1932	1796·7	2123·6	1958·6	1819·1
,, ,, 1931	1450·6	2084·5	1714·5	1751·5
,, ,, 1930	1589·7	1895·0	1731·2	1642·2
,, ,, 1929	1559·0	1932·9	1772·2	1781·5

Considering the figures as a whole, the usual loss of sunlight in the City as compared with Marple in the country is very marked. An equally notable feature of the results for 1932 is the higher general totals recorded at all stations, showing in a striking way the very much better weather with which the year, as a whole, was favoured. Drinkwater Park and Ladywell Sanatorium continue to occupy an intermediate position. Some further discussion of the results obtained by this method is appended at a later stage.

2. MEASUREMENT OF ULTRA VIOLET LIGHT.

In addition to the tests with acidified potassium iodide, an attempt has been made to measure the comparative variations in intensity of the ultra violet part of the solar radiation received at the Regent Road Station. The interest and importance of this is obvious from the discoveries in recent years of the part played by ultra violet light in the health, particularly of young children. A very simple method, devised by Mr. J. R. Ashworth, D.Sc., has been used, the following account of which is reprinted, with acknowledgments to the author :—" It depends on the darkening of self-toning photographic paper on exposure to the ultra violet light. In order to eliminate all rays but these, the light from the sky is passed through a particular kind of glass called 'ultra violet glass' (obtained from Messrs. Chance Brothers, Birmingham), which has the property of transmitting rays of wave length round about 3,600 Angstrom units, and of excluding all visible light.

To measure the intensity of the rays after transmission through the glass they are made to pass through a graded wedge of fine tissue paper (known in commerce as " 9 lb. medium glazed Bank ") made of strips laid one over the other, each strip projecting beyond the last one by 0·3 inches. This wedge has ten strips numbered in Indian ink and is three inches long and about one inch wide.

The apparatus consists of a shallow light tight metal box, six inches long, four inches broad, and ¾ inch deep, with a strip of ultra violet glass, 3¼ inches by one inch, cemented into an oblong aperture in the lid. The paper wedge is secured behind a slot, the same size as the strip of ultra violet glass, cut in a piece of millboard which fits into the box and rests on another piece of millboard on which a strip of photographic paper may be laid. Kodak Kodatone self-toning paper has been used in these experiments.

When observations with the apparatus are to be made, the photographic paper is put on the millboard at the bottom of the box, the paper wedge is superposed in close contact with the photographic paper, the lid closed down and the whole exposed freely to the light of the sky. At the end of specified time, usually 24 hours, the box is opened, the photographic paper at once examined, and the last number is read off which can just be discerned. This gives the number of layers of paper which the light has penetrated.

The number so read is the logarithm of the intensity of the light to a first approximation, but in order to test if the logarithmic law may be safely used, some experiments were made in which the layers of paper were placed successively against one face of the photometer and the transmission factor was then determined for visible light.

By this photometric experiment, the transmission factors for one, two and three or more layers of paper were found, and by means of the logarithmic law, the transmission factor *f* for one layer of paper was calculated, with the following results :—

LAYERS OF PAPER. n	f
1	0·77
2	0·77
3	0·76
4	0·77
5	0·77

The uniformity of these results for *f* shows that it is justifiable to use the logarithmic law. We can, however, if necessary, directly calibrate the scale.

When *f* is known, then a scale of comparative values for *I*, the intensity of the light, can be constructed for corresponding values of *n*, the number of layers of paper.

The transmission factor f_v has been determined as follows for ultra violet rays.

In the first place a piece of fine brass wire gauze was tested for its transmission factor for visible light by means of a Bunsen photometer.

Electric glow lamps were placed on either side of the photometer and equality of illumination obtained in the usual way, then one side of the photometer was covered with the gauze and the lamp nearer the gauze was moved to a new position and equality of illumination again obtained. The lamp on the other side remaining undisturbed, it follows that *F*, the transmission factor for the gauze, is the ratio of the squares of the distances of the adjustable lamp. In this way it was found that $F = 0{\cdot}36$. Now this factor must be true for rays which have wave lengths in the visible or beyond the visible spectrum, and so can be used with ultra violet light.

In the next place two identical frames provided with ultra violet glass, paper scales and photographic paper were exposed to the light of an arc lamp for about 20 minutes. One of the frames was covered with the fine brass wire gauze and it was found that the light which had passed through the gauze had been reduced in intensity by two steps of the paper scale.

Now $f^n_v = F$ by the logarithmic law, and as $n = 2$ and $f = 0{\cdot}36$, it is readily calculated that $f_v = 0{\cdot}6$.

Further determinations were made in the same way, using daylight instead of the arc lamp, and the result again was 0·6. This number has been adopted as the transmission factor for ultra violet light for one layer of paper.

It will be noticed that this value of f_v for one layer of paper is lower than the value of f found for visible rays, from which it is to be inferred that the paper transmits visible light more freely than the invisible ultra violet light."

By recording the number of layers of the paper wedge through which the light has penetrated in any experiment and by using the formula $I = K f^{-n}$ a comparative measure of the intensity may be obtained. In this formula I = intensity, f = transmission factor for the paper of the wedge (0·6), n = the number of layers penetrated, and K = a constant, arbitrarily fixed as 0·1 for these experiments.

The following table shows the results obtained by this method as monthly totals. It is difficult to give concisely and in simple form an account of results of daily observations having a wide range of variation. The maximum and minimum observations recorded in each month are given, which show the extreme variation experienced during the month.

TABLE 13.

VARIATION OF ULTRA VIOLET LIGHT IN SALFORD.

REGENT ROAD.

Month, 1932.	Jan.	Feb.	Mch.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Monthly Total ..	326	124	624	1806	2961	4915	2830	1686	1102	600	208	184
Daily Max. .	46	17	46	106	354	354	354	212	128	28	14	14
Daily Min. ..	0	0	6	17	17	46	46	6	6	8	4	4
Hours Bright Sunshine	No observations.			99·5	81·3	161	100·2	141	89·3	60·5	14·7	5·3

The hours of bright sunshine recorded by the Campbell-Stokes instrument, placed at the same site for April and the subsequent months, are added to the table as a matter of interest.

The two diagrams which are now given show the same facts in a pictorial form. They give a broad idea of the variation throughout the year of the ultra violet radiation and of sunlight.

DIAGRAM 1.

VARIATION OF ULTRA VIOLET LIGHT THROUGHOUT THE YEAR 1932.
REGENT ROAD, SALFORD.
PHOTOGRAPHIC METHOD.

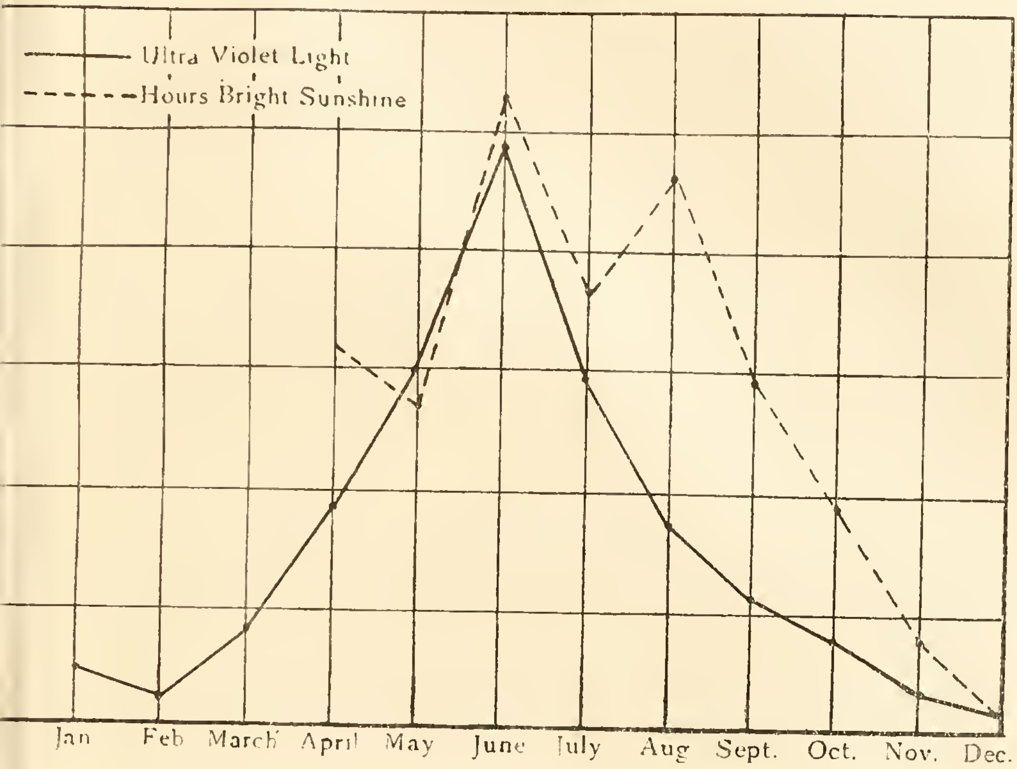
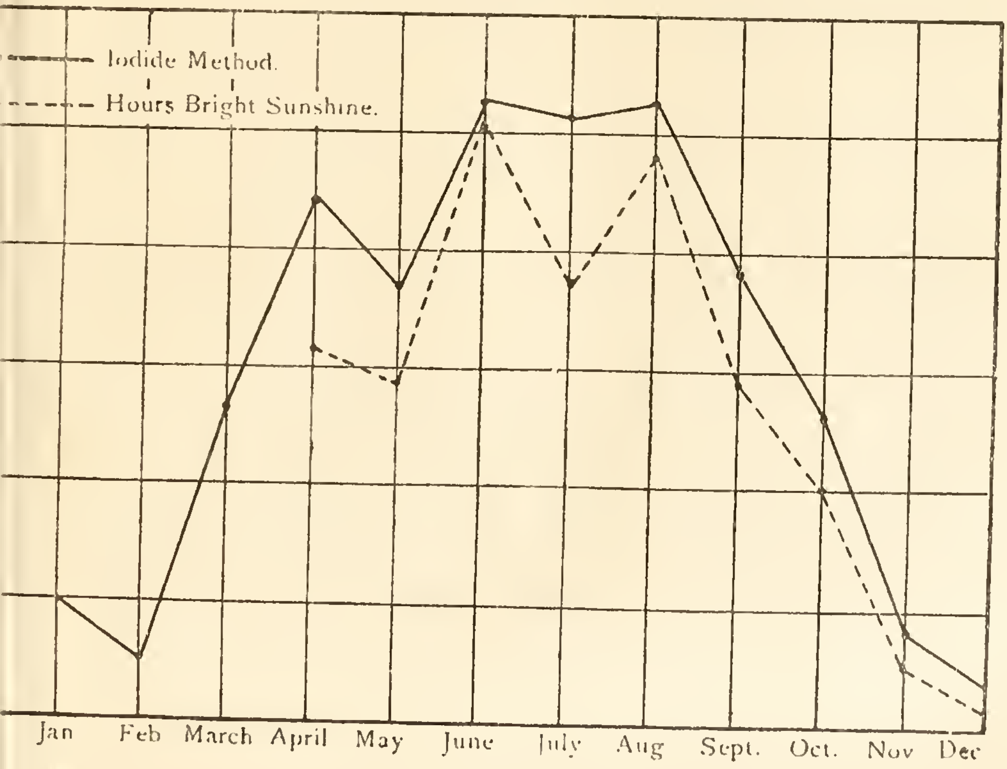


DIAGRAM 2.

VARIATION OF SUNLIGHT THROUGHOUT THE YEAR 1932.
REGENT ROAD, SALFORD.
IODIDE METHOD.



It is interesting to see that the variation in sunlight as measured by the iodide method follows fairly closely the variation in the hours of bright sunshine as recorded by the Campbell-Stokes instrument. This is what might be expected, and the fact that the agreement of the latter with the variation of the ultra violet light is not so close is hardly surprising.

Diagram 3 is a specimen showing the variations recorded day by day for a typical month (April, 1932).

The interest and importance of this lies in the fact that it suggests that the same day to day factors affecting our sunlight affect our reception of ultra violet radiation in a broadly similar manner. That is to say, that if for certain reasons of weather or atmospheric pollution we received on a day in April 50 per cent less sunlight than on the preceding day, it is likely (though, of course, not certain) that we should receive about 50 per cent less ultra violet light.

At this stage it is appropriate to point out a way in which the two methods do not agree. A glance at Table number 13 will show a remarkable falling off in the amount of ultra violet light radiation in the winter months. The monthly totals for November and December are in the neighbourhood of 200 for each month, while the figure for June is nearly 5,000. This seems to indicate that the amount of ultra violet light received in midwinter is only about one-twenty-fifth of that received in midsummer. Yet reference to the figures obtained by the potassium iodide method at the Regent Road Station in Table 12, gives the figures for sunlight as June 269·2, and November 46·1, December 37·8. The amount in winter is again much less, but instead of being one-twenty-fifth, the ratio is only roughly one-seventh.

What are we to believe from this ? Can we say that while our loss of ordinary sunlight in winter is great, out loss of ultra violet radiation from the sun is three times as great ? This would be a very striking inference in view of the very great importance attached to ultra violet radiation by our doctors, but it would be premature to make it at the present stage. It may well be that the figures given are not far from the truth, but certain factors must be considered before they are accepted. Both the potassium iodide method and the photographic method have certain disadvantages and possess only a moderate degree of accuracy. No one has ever claimed for them that they are capable of yielding results as accurate as those obtained in the laboratory in ordinary fields of scientific work ; on the other hand, they can yield results of value, and which will show general tendencies, and having in mind the many variables, such as weather, which must always affect studies in atmospheric pollution, we cannot hope to do better at present than to discover such broad tendencies and variations. But in applying such methods in new ways, we need always to remember what their limitations are. Reference has already been made to some criticisms of the iodide method. While these criticisms are undoubtedly valid, they do not affect the usefulness of the iodide method for the purpose for which it has hitherto been employed. The writer thinks it probable that the iodide method tends to give low results in summer and the photographic method

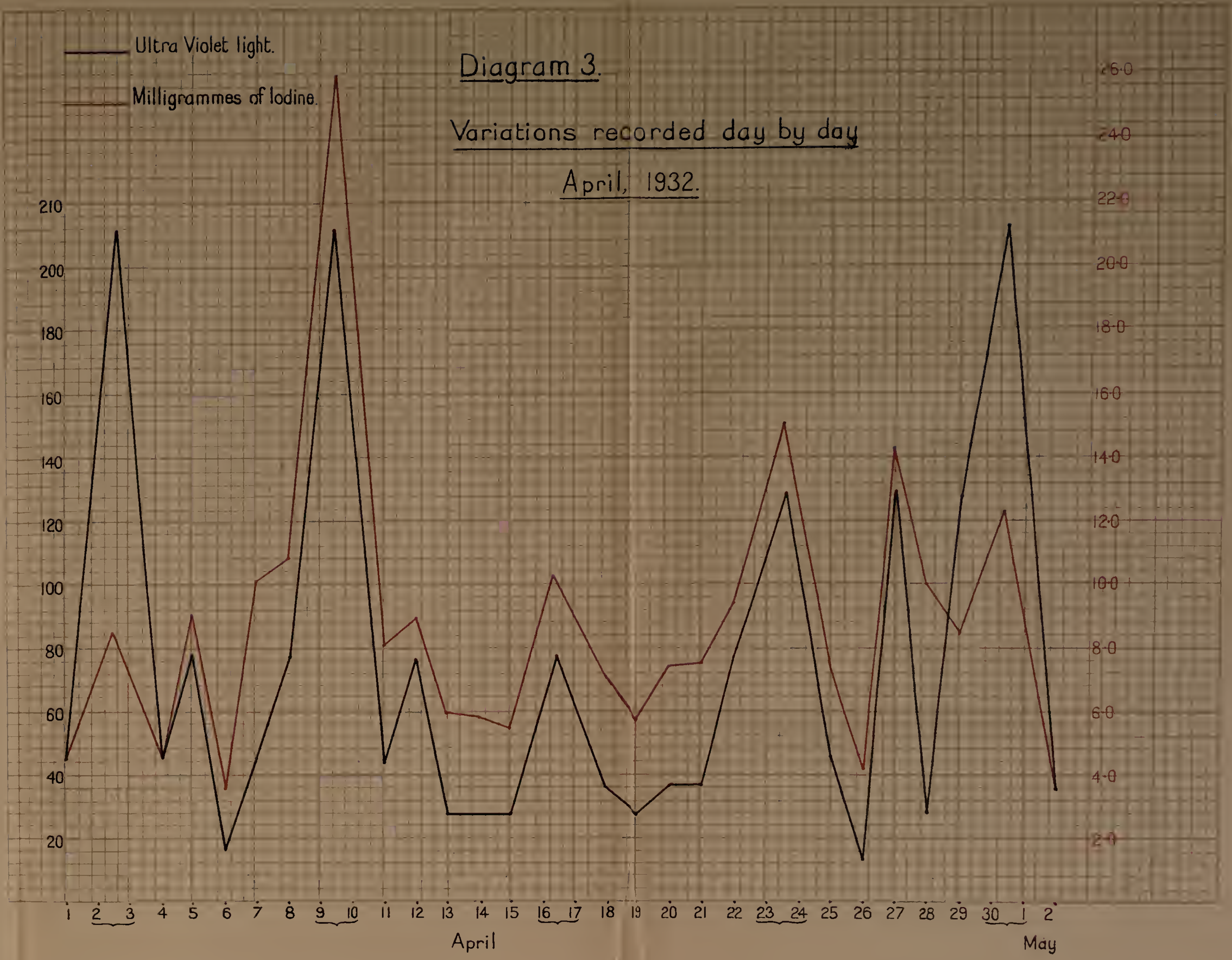


Diagram 3.

Variations recorded day by day

April, 1932.

low results in winter. If this were true we should have the ratios for winter to summer, obtained by each method, altered to figures which might more nearly correspond. Further investigation is contemplated this year with the hope of deciding some of these problems and of being able to give a more definite answer to this interesting question.

An extended experience of Dr. Ashworth's photographic method prompts the following evaluation of its merits and defects. Its outstanding qualities are extreme simplicity, cheapness, and the fact that it requires almost no time and attention to operate, and no laboratory or chemicals are necessary to carry it out. Defects are the discoloration of the paper wedge by sunlight with the consequent alteration of its transmission factor and the fact that the process is capable of only a moderate accuracy. The glass filter is comparatively thick, and may cause low readings because it fails to transmit a material percentage of the ultra violet light falling on it.

It should also be noted that the wavelength of the rays transmitted by the glass filter is about 3,600° A, while the wavelength of the rays of the greatest medical value is about 3,000° A. This difference is not serious, and it may be stated with a fair degree of confidence that sound deductions based upon this method for rays of wavelength 3,600° A will be equally sound for rays of 3,000° A.

Analysis of the results obtained by the two methods has been made from another angle. If the results obtained throughout the whole of the year are grouped according to the days of the week, it is possible to work out an average value for Monday, Tuesday, etc., and the advantage of this is that with a fairly large number of Mondays, and so on, variables such as weather tend to cancel out, and we are left with something approaching the ideal week, in the figures for which it may be possible to trace a little of the effect of human activities.

These average figures are given in Table 14, and gain sufficiently from pictorial representation to be reproduced as Diagram 4.

TABLE 14.

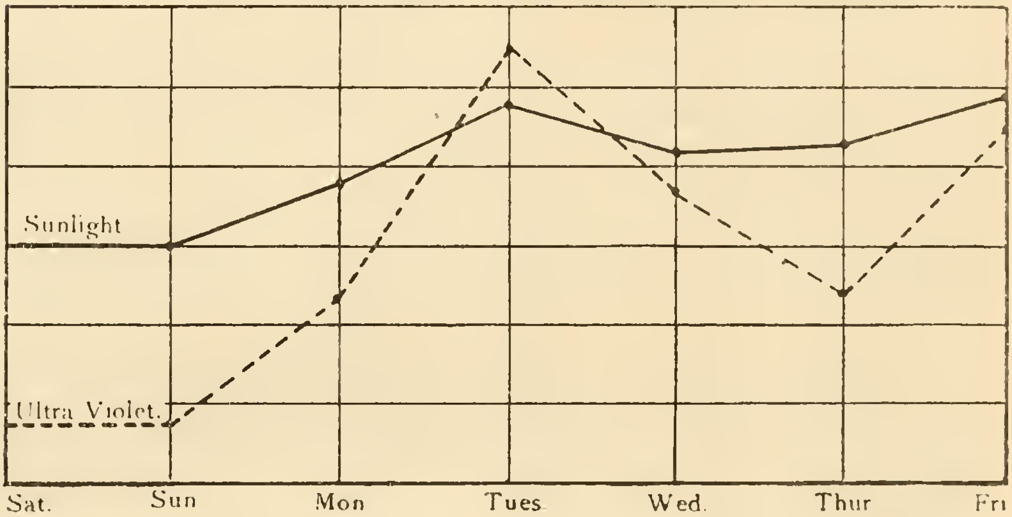
AVERAGE VARIATION OF SUNLIGHT AND ULTRA VIOLET LIGHT THROUGHOUT THE WEEK, 1932, REGENT ROAD, SALFORD.

	Sun. *	Mon.	Tues.	Wed.	Thur.	Fri.	Sat. *
Sunlight ……	4·45	4·80	5·36	5·08	5·15	5·45	4·45
Ultra Violet Light …….	34	42	57	48	42	53	34

*It is unfortunately impossible to give individual figures for Saturday and Sunday owing to the closing of the laboratory. The figures, identical in each case for Saturday and Sunday, represent half the values obtained by running the experiments over the two days.

DIAGRAM 4.

Average Variation of Sunlight and Ultra Violet Light Throughout the Week, 1932, Regent Road, Salford.



Here at once a striking fact emerges. In the City, a very material loss of solar radiation, both ordinary visible sunlight and ultra violet light, occurs at the week-ends, and there is little doubt that smoke produced by the domestic fire is responsible, since industrial smoke must be less at week-ends than at other times. The domestic fire has its peak period at the week-end owing to the cooking of Sunday's dinner, and the use of bigger fires in extra rooms for the social activities of the family and guests. That Monday is the next worst day is also noteworthy, suggesting that the wind has not always completely blown away the heavier pall of smoke produced at the week-ends. Another factor which probably affects the Monday figure is the weekly wash-day, which in so many homes falls on the first day of the week.

An analysis of the figures for Marple, for which no records for ultra violet light are available, provides an interesting contrast.

TABLE 15.

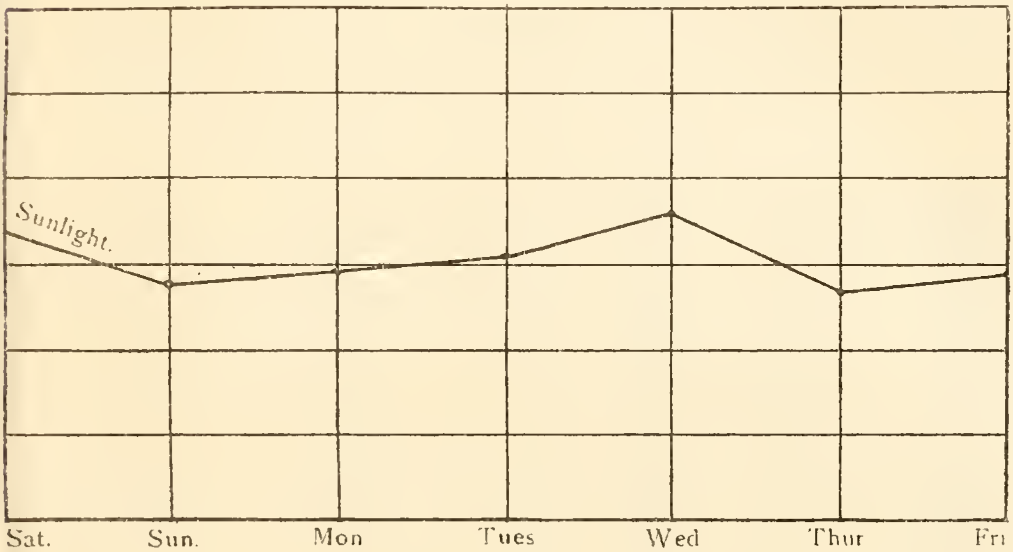
Average Variation of Sunlight Throughout the Week, 1932. Nab Top Sanatorium, Marple.

Sunday.	Monday.	Tuesday.	Wednesday	Thursday.	Friday.	Saturday.
5·55	5·70	5·79	6·24	5·77	5·83	6·28

DIAGRAM 5.

AVERAGE VARIATION OF SUNLIGHT THROUGHOUT THE WEEK, 1932.

NAB TOP SANATORIUM, MARPLE.



Here it has been possible to obtain separate figures for Saturday and Sunday, and it is remarkable to find that while Sunday has once again the worst record of the week, Saturday has the best. The atmosphere in this district seems gradually to recover from Sunday's dose of smoke until there is a sudden set back on Thursday, after which there is again a steady improvement. Comparing Marple with Salford (Diagrams 5 and 4) it will be seen at once that the curves are of the same shape. We have the worst period on Sunday, with gradual improvement till mid-week, followed by a relapse and then another gradual improvement. At Marple, the relapse occurs on Thursdays, and in Salford on Wednesdays. It would be very interesting to know to what this relapse is due : no obvious explanation seems to exist.

3. SULPHUR GASES IN THE ATMOSPHERE.

Since October, 1931, observations on the daily amount of sulphur di-oxide in the atmosphere have been carried out by the method devised in the Government Laboratory (Investigation of Atmospheric Pollution, 17th Report). A summary of the results obtained to the end of 1932 is given in table 17.

TABLE 17.

SULPHUR GASES IN THE ATMOSPHERE. REGENT ROAD, SALFORD, OCTOBER, 1931, TO DECEMBER, 1932.

MONTH.	No. of determinations.	Volumes of sulphur di-oxide in one million volumes of air.			Percentage of total readings.	
		Average	Highest	Lowest	Above 0·2 pts. per million	Below 0·1 parts per million
October, 1931	23	0·066	0·161	0·027	0	83
November, 1931	22	0·048	0·067	0·022	0	100
December, 1931	24	0·060	0·110	0·039	0	92
January, 1932	25	0·177	0·684	0·047	24	4
February, ,,	23	0·349	1·630	0·156	78	0
March, ,,	24	0·203	0·404	0·081	50	17
April, ,,	23	0·157	0·278	0·056	26	22
May, ,,	22	0·139	0·199	0·080	0	9
June, ,,	23	0·142	0·280	0·068	17	13
July, ,,	21	0·115	0·203	NIL	5	43
August, ,,	22	0·088	0·158	0·048	0	84
September, ,,	22	0·144	0·158	0·047	0	32
October, ,,	21	0·150	0·198	0·095	0	10
November, ,,	22	0·137	0·245	0·087	14	18
December, ,,	20	0·151	0·205	0·105	5	0

Observations similar to the above are also being conducted by the following local authorities :- -Barnsley, Birmingham, Cardiff, Huddersfield, London, Newcastle-on-Tyne and Sheffield.

The eighteenth Annual Report on the Investigation of Atmospheric Pollution gives tables similar to the above for all these authorities up to the end of March, 1932. At that time Salford held the doubtful distinction of recording the highest observation, namely, the 1·63 parts per million recorded on the 19th of February, 1932. This day was notorious for one of those dense fogs which are so well known to the inhabitants of Manchester and Salford, and this brings us at once to one of the outstanding points of the subject. Dense fogs will always result in a high observation for sulphur gases in the air, since these arise almost entirely from the burning of fuel, such as coal and coke, containing sulphur, and at such times the products of combustion are banked up in a concentrated form in the still air over the City. Reference to the table will show that percentages are given of the total number of occasions during each month, both when the sulphur gases exceeded 0·2 parts per million, and also when they were less than 0·1 parts per million. The former may be considered as worse than average and the latter as good. A concentration of one part per million is very high indeed, in fact there are in the report quoted only two : in addition to the 1·63 parts at Salford, a day in November, 1931, at Barnsley, when 1·5 parts were reached. Barnsley also has the highest monthly average so far noted: 0·42 parts per million for each day of November, 1931. Turning to the other end of the scale, in good weather and at good sites, concentrations of the order of 0·01 parts per million are frequent. From November, 1931, to March, 1932, at Cardiff, every reading has been below 0·1 parts per million. To speak of impurities in the atmosphere, which are normally present in from one to two parts in ten millions, may seem to some to be rather a waste of time, and it is for this reason that the information which follows is added to the first annual account to be given of this work.

Estimates have been attempted of the actual loss and damage in different areas which can be attributed to the smoke nuisance as a whole. The best method is probably that quoted by Shaw and Owens in their book, "The Smoke Problem of Great Cities," based upon an original enquiry in 1912 in the American city of Pittsburgh. On the basis of this method and of the average results from the three soot gauges in Salford, for the years 1929, 1930 and 1931, the figure for Salford would be £268,000 annually, or 24s. per head of the population per annum. Lest this figure should be considered as a wild exaggeration, attention is drawn to the investigation in the neighbouring City of Manchester in 1918, which arrived at the conclusion that the total annual cost of smoke to Manchester was at least £750,000 (Shaw and Owens, *loc cit.*, also "The Black Smoke Tax," issued by the Manchester Air Pollution Advisory Board, 1919). This figure attempts to cover loss and damage of all kinds, and caused by all the deleterious matters in the smoke. Of course, sulphur gases are not responsible for the whole of this by any means; at the same time, it is recognised that these gases, particularly in conjunction with the soot, are probably the most generally harmful of all the components of smoke. While, too, the amounts of sulphur di-oxide expressed in the above way may seem negligible, it must be remembered that owing to the vast size of the atmosphere, the smallest percentages may become significant if they are of bodies with powerful chemical action. A large power station was recently stated to be responsible for the daily discharge into the air of 11 tons of sulphur di-oxide.*

Sulphur di-oxide is particularly harmful to buildings since its powerfully acid action upon the common building stone causes blistering and flaking. Its acid action is also very deleterious to all outdoor metal work. The damage done to Government buildings alone in a year has been estimated at not less than £120,000.

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*Considerable improvements are being effected in this direction. The problem is a new one. Much research is being carried out and may be expected to achieve a reasonable success shortly.

Upon the medical side it should be sufficient to quote the practically unanimous opinion of doctors of the harmful action of these gases upon the respiratory system and the following (from the 18th Annual Report of the Investigation of Atmospheric Pollution):—

> " The issue of the Report of the Commission of Enquiry appointed by the Belgian authorities to enquire into the causes of deaths which occurred during a fog in the Meuse valley in December, 1930, marks the completion of an important piece of work, the occasion for which provides added demonstration, if added demonstration be needed, of the importance of any measures designed to cope with the problem. The Commission report that the deaths were brought about by the concentration of sulphur acids, brought about in a highly industrial area by a combination of topographical features with certain weather conditions. It is unlikely that similar deadly fogs will occur in any part of this country, but the number of fatalities which occurred in this extreme case are an eloquent indication of the serious impairment to health, even if without immediate fatal results, which may be brought about by polluted air.

The study of the sulphur di-oxide by the lead peroxide method was also commenced during the period, but comment on this will be deferred until next year. This method is also being used by the other authorities co-operating in the examination described above.

4. Examination of Soot Gauge Deposits.

The work of examining the deposit obtained in the special gauges placed at various points in the City has been continued. Standard gauges are situated at Peel Park, Salford, Drinkwater Park Hospital, Ladywell Sanatorium, and the Corporation Sanatorium at Marple, Cheshire.

In uniformity with the results expressed by other stations, of which there is a number scattered throughout Great Britain, the results are expressed in metric tons per square kilometre. The metric ton is equivalent to slightly more than the British ton, whilst there are 2·59 square kilometres to a square mile so that to convert metric tons per square kilometre to English tons per square mile, it is necessary to multiply by 2·55 or, roughly, 2½. The following are the results that have been obtained during the year. The results from Ladywell Sanatorium and Drinkwater Park are very similar and are rather less than the City area, whilst, as was to be expected, the air at Marple is, comparatively speaking, " pure."

In order that comparison may be made with other districts, the average figures are given for the gauges giving the greatest and least deposits. The gauge showing the least deposit is Western Park, Leicester, and that showing the greatest is Ashington, on the North-East coast, near Newcastle-on-Tyne.

Perhaps the most noticeable feature of the results is the acid nature of the deposit. This is shown by the pH values of the water collected. The pH due to the carbonic acid in the air would be about 5·5. Figures below this, therefore, indicate an acid deposit, and higher figures an alkaline reaction. Considering that Marple is fairly well in the country, and shows a general record figure than those obtained in the City, its acid rain water is noteworthy. This shows how widespread may be the drift of the acid smoke from our cities.

TABLE 18.

pH Values for the Four Stations.

Month.	Peel Park.	Drinkwater Park.	Ladywell Sanatorium.	Nab Top Sanatorium, Marple.
January	3·7	3·9	3·9	4·2
February	—	—	—	—
March	3·6	3·6	3·2	4·4
April	4·4	3·9	3·9	4·4
May	3·2	3·8	3·2	4·4
June	6·8	5·9	7·2	5·2
July	3·6	3·8	3·8	4·2
August	4·0	5·4	5·8	3·4
September	4·2	6·3	4·0	6·3
October	3·5	3·8	3·4	4·7
November	3·6	4·0	3·8	4·8
December	3·8	3·8	4·0	4·6

TABLE 19.

SOOT GAUGE OBSERVATIONS.

		Salford : Peel Park.		Salford : Ladywell Sanatorium.		Salford : Drinkwater Park.		Marple : Salford Sanatorium.		Leicester : Western Park. *		Ashington : High Market. *	
Rainfall in millimetres		62·3		76·4		87·2		74·6		53·0		59·0	
Tar	Insoluble matter	0·15	5·58	0·07	4·01	0·11	4·03	0·10	1·58	0·05	1·21	0·73	17·97
Carbonaceous, other than tar		1·84		1·74		2·03		0·65		0·39		3·60	
Ash		3·59		2·20		1·89		0·83		0·77		13·64	
Loss on ignition	Soluble matter	0·86	2·85	0·95	2·95	1·08	2·71	0·72	2·00	0·69	1·63	1·55	6·20
Ash		1·99		2·00		1·63		1·28		0·94		4·65	
Total Solids		8·46		6·96		6·75		3·58		2·83		24·15	
Sulphates	Included in soluble matter	1·12		1·06		1·44		1·08		0·45		2·09	
Chlorine		0·95		1·31		1·04		0·81		0·18		0·42	
Ammonia		0·03		0·03		0·09		0·02		0·04		0·08	
pH		4·0		4·2		4·4		4·4		6·2		7·8	
Acidity		0·72		0·67		0·68		0·31		..		..	

* These figures are computed from April, 1931, to March, 1932.

SECTION VII.

Maternity and Child Welfare Department, Municipal Maternity Home and Babies' Hospital, and the Supervision of Midwives.

Staff.

3 Lady Medical Officers.

1 Assistant Inspector of Midwives.

16 Health Visitors.

3 Masseuses, 2 of whom are also employed in the Artificial Sunlight Clinic.

7 Clerks.

Medical Officers.

The Medical Officers conduct all examinations of mothers and children attending the Clinics and Centres.

The Senior Medical Officer attends five Child Welfare Sessions, two Sessions for consultation *re* Artificial Sunlight treatment, and one Ante-natal Clinic per week, supervises the work of the Health Visitors, and attends one Ante-natal and one Child Welfare session per month at the Royal District Nurses' Home. In addition, she attends meetings of four Voluntary Societies who undertake work in connection with Maternity and Child Welfare, is Supervisor of Midwives, and has charge of the administration of the department.

The second Medical Officer has charge of the Municipal Maternity Home and Babies' Hospital, in addition to which she attends three Child Welfare Centres and two Ante-natal Clinics weekly.

The third Medical Officer attends Child Welfare Clinics and Centres during seven Sessions per week ; she also attends two Anto-natal Sessions and one Diphtheria Immunisation Clinic. She is also on call as Anæsthetist and does relief duty at the Municipal Maternity Home and Babies' Hospital.

Health Visitors.

Each Health Visitor is allotted a district to the visiting of which most of her time is devoted. It is the duty of the Visitor to visit each child born on her district, and to keep a record of its progress until it reaches the age of five years. A record is also kept of all details connected with the sanitary state of the house and the health of its occupants. In addition, the Health Visitors carry on the work at the various Maternity and Child

Welfare Centres throughout the City. One Health Visitor devotes half her time to the work involved by the administration of the Children Act, 1908.

The following table shows the number of visits paid by the Health Visitors in the various wards of the City during 1932 :—

TABLE C.W. 1.

Wards.	First Visits to Expectant Mothers.	First Visits to Children under 1 year.	Total Visits to Children under 1 year.	Total Visits to Children 1 to 5 years.	Total Visits to Expectant Mothers.	Grand Total.
Kersal	54	167	633	610	75	1318
Mandley Park	59	194	851	993	87	1931
Albert Park	93	273	867	1602	127	2596
Charlestown	40	261	1046	1145	53	2244
Regent	54	260	1031	1440	93	2564
St. Thomas'	102	230	1005	1790	135	2930
Weaste & Claremont	57	241	840	1520	81	2441
St. Paul's	30	227	1318	1542	84	2944
St. Matthias'	46	270	885	1084	57	2026
Docks	70	203	1029	1646	101	2776
Trinity	73	270	1443	1903	97	3443
Ordsall	90	284	1000	1300	111	2411
Seedley	6	96	305	532	5	842
Langworthy	33	150	516	1071	34	1621
Crescent	59	324	1425	2169	85	3679
	866	3450	14194	20347	1225	35766

Clerks.

A considerable amount of clerical work is involved in the Maternity and Child Welfare Scheme, the principal duties of the Clerks being as follows :—

To attend the Maternity and Child Welfare Clinics and Centres in order to record attendances, weights, etc., and to issue charts and cards in respect of patients.

To sell dried food to mothers and keep records relating thereto.

To administer the scheme for assisting necessitous persons.

To conduct correspondence, prepare reports, compile returns for the Ministry of Health, etc., and to keep such records and registers as are required in connection with the administration of the various Acts.

To do all clerical work in connection with the administration of the Municipal Maternity Home and Babies' Hospital.

Maternity and Child Welfare Clinics and Centres.

There are two Maternity and Child Welfare Clinics and eight Child Welfare Centres in Salford. The two Clinics, one of which is held in the

Municipal Buildings, Regent Road, and the other in the Teneriffe Street Schools, Broughton, are open daily. The eight Child Welfare Centres are situated in the various districts of the City as follows :—

Ordsall Centre, Landseer Street, Salford.
10–12, Encombe Place, Salford.
John Street Centre, John Street Hall, Pendleton.
Seedley Centre, St. John's Wesleyan Schools, Langworthy Road, Pendleton.
Enys Street Centre, Enys Street School, Whit Lane, Pendleton.
Woodbine Street Centre, Woodbine Street, Salford.
Irlams-o'th'-Height Centre, Congregational Church, Irlams-o'th'-Height.
Regent Road Centre, 135, Regent Road, Salford.

These Centres are open once weekly. The number of attendances continues to increase, particularly is this the case at the Seedley Centre. Every infant is thoroughly examined by the Medical Officer at its first attendance, and at regular monthly intervals until it is 12 months old. Infants are then examined every three months unless receiving massage, sunlight, or other special treatment, when they are seen by the Medical Officer at least once pér month. Each infant attending the Centre is weighed, and valuable advice on infant management is given to all mothers—the work thus being largely educational and preventive.

The cases attending the Clinics and Centres are "followed up" in their homes by the Health Visitor, who help the patients to carry out the instructions given.

Ante-Natal Clinics.

Ante-natal Clinics are held on Thursday each week at Regent Road and Teneriffe Street Centres. The number of patients attending these Clinics is gradually increasing, more cases being sent by the midwives who quite often accompany their patients to the Clinics, and are present at the examinations.

At these Clinics, pregnant women are examined and advised at their first attendance, and at regular monthly intervals until their confinement. In this way difficulties which might occur at confinement can be foreseen and avoided. Abnormal cases are seen more frequently, and when necessary, the patient is referred to a specialist or to a hospital for the appropriate treatment. Arrangements are made for suitable applicants to be admitted to the Municipal Maternity Home, and these cases are kept under special observation.

In addition to the two Clinics mentioned above, the Senior Medical Officer attends the Ante-natal Clinic held once monthly at the Royal District Nurses' Home. Cases attending this Clinic who require to be seen more often than once monthly are asked to attend the Clinic at Regent Road. The number of consultations at the District Nurses' Home, during 1932, was 324.

Table C.W. 2, shows the number of attendances at the Clinics and Centres, and the number of consultations held during 1932 :—

TABLE C.W. 2.

CLINICS AND CENTRES.	No of New Cases. Children.		No. of New Cases. Mothers.		Total Attendances.				Grand Total Attendances.	Consultations.			
					Children.		Mothers.			Children.		Mothers.	
	Under 1.	Over 1.	Expectant.	Nursing.	Under 1.	Over 1.	Expectant.	Nursing.		Under 1.	Over 1.	Expectant.	Nursing.
Regent Road Clinic	554	355	620	42	3677	4194	2469	74	10414	1576	1676	2469	74
Ordsall	169	58	22	106	2771	1502	35	1697	6005	745	427	35	22
Encombe Place	256	126	33	120	3812	2051	73	1762	7698	1070	605	73	41
John Street, Pendleton...	196	57	21	128	4551	2344	88	1761	8744	1091	542	90	36
Seedley	322	110	15	193	5855	3175	23	2804	11857	1289	773	23	20
Enys Street	206	101	27	105	3385	1933	67	1572	6957	968	585	66	37
Regent Road	266	138	2	104	2393	1686	4	887	4970	902	646	4	5
Woodbine Street........	184	27	8	140	2323	818	8	1663	4812	725	321	8	15
Teneriffe Street Clinic ..	525	307	154	35	6978	3658	368	70	11074	2820	1667	355	70
Irlams-o'-th'-Height	102	33	3	62	1685	546	4	1034	3269	585	245	4	17
	2780	1312	905	1035	37430	21907	3139	13324	75800	11771	7487	3127	337

Massage Treatment.

Massage treatment is given for Rickets and other Orthopædic conditions, at the Clinics and Centres. The results in all cases where the children are brought regularly, and for a sufficient length of time, are very satisfactory. The children attending for massage treatment are seen regularly by the Medical Officers. In cases where the mothers cease attending before the children are officially discharged, the Health Visitor investigates and re-invites them to attend. After they have been discharged, the mothers are asked to bring them regularly to the Child Welfare Centres in order that they may be kept under observation.

During the year 1932, the following cases have been dealt with :—

Clinics and Centres.	No. of Sessions held weekly.	No. of regular cases.	No. of Casual cases.	Cases Discharged cured.	Total No. of Attendances.
Regent Road	10	157	159	21	4625
Encombe Place	1	32	62	7	609
Teneriffe Street	3	75	100	9	1494
Enys Street	2	51	51	11	1197
Ordsall	1	38	31	6	661
Seedley	2	76	73	10	1211
Babies' Hospital	1	35	..	19	454
		464	476	83	10251

Artificial Light Clinic.

The work of this Clinic continues to be successful. The conditions for which artificial sunlight is administered are Rickets, Anæmia, Marasmus and Debility following acute infectious diseases. The results obtained are very gratifying, and only a few cases fail to respond to treatment. After discharge from the Sunlight Clinic each child is kept under observation by the Medical Officer at the Child Welfare Centre. In a few special cases, a second course of treatment has been found necessary. The treatment is administered by a competent operator under the supervision of the Medical Officer. All cases are examined regularly during the course of treatment.

The following are the Sunlight Clinic figures for the year 1932 :—

Individual cases	278
Total attendances..	3603
Cases discharged	55
Very much improved	7
Much improved..	8
Improved	40
No improvement owing to irregular attendance.........	117

Home Helps.

The applicants for Home Helps are usually known to the Maternity and Child Welfare Department through the Free Milk Scheme, and are consequently deserving cases. Home Helps are only supplied where there is absolutely no one to look after the home and other children whilst the mother is in bed. The Home Help attends at the home for ten days from the day of confinement, her hours being from 8 a.m. to 2 p.m., for which she receives from the Corporation 4s. 0d. per day, but provides her own food. Her duties are to look after the house and children generally, see older children off to school, and prepare meals for the mother and the rest of the family. She does not do the family wash, but may if necessary, wash baby clothes in readiness for the Midwife's visit. As far as possible Home Helps are supplied from the district in which the patient lives, for the sake of convenience, and in order to save travelling expenses. If it is necessary to supply a Home Help who lives some distance away from the patient, reasonable travelling expenses are allowed.

There are four Home Helps on the books at present, they being women who are particularly suited for the work, and who are well known to the Health Visitors as to character, reliability, etc.

The Scheme has been in operation since 1920, and has worked very satisfactorily. During the year 1932, 4 women have been employed as Home Helps and 13 necessitous cases have been supplied. In one case, where the mother was very ill and the family were in acute distress, the Home Help was allowed to attend for three weeks instead of the usual ten days.

Assisted Milk Scheme.

Under the Free Milk Scheme assistance has been given to 1733 applicants, free milk being granted to 1584, milk at part-payment to 35. and dried foods to 114. Assisted cases are kept under careful observation and are required to attend the Clinics and Centres regularly. In all cases careful investigation is made as to the financial circumstances of the family during the period in which they are receiving assistance from the Corporation.

Diphtheria Immunisation.

During the year 1932, Immunisation Clinics have been established at three of the Child Welfare Centres. Intensive propaganda work has been carried on by the Health Visitors, who endeavour to persuade all parents with whom they come in contact, to have their children protected. The results have been more encouraging than in previous years, and it is hoped to make the existence of the Immunisation Clinics much more widely known in the future.

Sewing Classes.

Sewing classes are held on one half day per week at four Centres, at which mothers are taught to make hygienic clothing and " thrift " garments, i.e., garments made from cast-off adult clothing, for their children. A Health Visitor attends each of these classes, and at three of the Centres help is given by voluntary workers who are members of the Ladies' Public Health Society.

Dinners for Expectant and Nursing Mothers.

Arrangements are made with the Ladies' Public Health Society for the serving, on every full working day, of dinners for expectant and nursing mothers at the Ordsall, Encombe Place, and John Street Centres. One Health Visitor is in attendance at least one day per week at each Centre, the remainder of the work being carried on by voluntary assistance. Every expectant mother attending the Centres for dinners is asked to attend the Ante-natal Clinic regularly, and is kept under medical supervision.

Children Act, 1908.

Under Part 1 of this Act, any person who undertakes for payment, the nursing of a child under seven years of age, must be registered by the Local Supervising Authority. Such children are visited monthly, and a record is kept of the state of their health. The work involved under this Act is carried out by one of the Health Visitors.

The following is a statement of the work done during the year 1932 :—

New registrations	25
Transfers to Health Visitor	5
Changes of address out of Salford	8
Children attaining the age of 7 years	7
Children returned to parents	3
Adopted	2
Total interviews *re* cases	24
Total cases dealt with during 1932	62
Total number of cases on register December 1932	40
Total number of visits paid during the year	475

TABLE C.W. 3.—NOTIFICATION OF BIRTHS.

Wards.	LIVE BIRTHS NOTIFIED BY						Total live births notified.	Live births not notified.	Still-births notified.	Still-births notified by St. Mary's
	Mid-wives.	Medical Practitioners.	Parents & other persons.	St. Mary's Hospital.	Municipal Maternity Home.	Hope Hospital.				
Kersal	68	30	1	8	14	25	146	14	12	—
Mandley Park ..	124	20	—		8	27	186	5	7	2
Albert Park	128	42	—	10	24	47	251	9	14	3
Charlestown	148	29	—	4	22	73	276	—	9	2
St. Matthias' ...	133	41	—	10	9	55	248	2	15	2
Trinity	143	58	—	10	8	63	282	1	8	2
St. Thomas'	126	6	—	1	13	65	211	5	13	1
Claremont	21	13	2	1	7	23	67	5	6	1
St. Paul's	173	9	—	1	9	45	237	—	16	—
Seedley	39	12	—	2	20	26	99	—	3	1
Langworthy	75	10	—	—	22	40	147	—	11	—
Weaste	66	13	1	2	16	40	138	1	10	1
Regent	152	35	—	9	20	68	284	—	18	2
Docks	100	25	—	1	22	62	210	1	10	—
Crescent	172	41	—	14	15	77	319	1	19	—
Ordsall Park ..	175	8	—	4	15	54	256	1	15	—
	1,843	392	1	84	244	790	3,357	45	186	17

Municipal Maternity Home and Babies' Hospital.

This Institution has accommodation for 10 Maternity Cases and 16 children.

The Staff consists of the Medical Officer, Matron, Sister, four Staff Nurses and eight Probationer Nurses. The Hospital is recognised by the Central Midwives' Board as a training school for midwives. During 1932, five pupils were successful in obtaining the Diploma of the Central Midwives' Board.

During the year 1932, two cases of Puerperal Pyrexia occurred in the Home, both cases were removed to Ladywell Sanatorium, the Home was closed to admissions for 15 days, and thorough disinfection was carried out. An arrangement was made for patients who had booked for the Home to be admitted to Hope Hospital for confinement—an emergency until the Home was re-opened.

All cases for the Maternity Home are booked at the Regent Road Ante-natal Clinic, where they are required to attend regularly. There is no difficulty in getting patients to attend this Clinic, and as a result any abnormalities are treated promptly and serious complications avoided at the time of confinement. When they are discharged from the Home, patients are invited to attend the Child Welfare Centres where they may receive advice regarding their own health and that of their babies.

MATERNITY DEPARTMENT.

The number of cases admitted during the year 1932 was as follows :—

For special ante-natal treatment	12
For confinement	257
Referred to Hope Hospital	2
Not confined in 1932	1
Born before arrival at Hospital	1
BIRTHS (including 3 sets of twins).	
Males	129
Females	115
STILLBIRTHS.	
Males	8
Females	8
DEATHS OF INFANTS	3
MEDICAL ASSISTANCE.	
Maternity	60
Infants	4

BABIES' DEPARTMENT.

The 16 beds for children are divided into 10 beds for cases of Rickets, and six beds for cases of Marasmus and Nutritional Disorders. These cases require a stay of three to four months in Hospital for the treatment to be successful, and only a limited number can, therefore, be admitted in the course of a year. The results obtained are very satisfactory. A Sunlight Lamp is used for the treatment of Rickets and Marasmus. Clinical treatment is supplemented by natural sunlight and fresh air. In the summer months it is often possible to keep the children out of doors all day. When a child is discharged from Hospital, the mother is given written instructions as to feeding, etc.

ADMISSIONS.

The number of cases admitted during the year 1932 was 59, disposed as follows :—

25 Rickets.
1 Rickets and Anæmia.
1 Rickets and Malnutrition.
2 Rickets and Marasmus.
3 Rickets and Post-pneumonia Debility.
10 Malnutrition.
12 Marasmus.
4 Marasmus and early Rickets.
1 Tubercular Peritonitis.

DISCHARGES.

The number of cases discharged during the year 1932 was 52. These were as follows :—

Cured.

19 Rickets.
3 Rickets and Post-pneumonia Debility.
1 Rickets and Marasmus.
1 Rickets and Malnutrition.
3 Post-pneumonia Debility.
8 Marasmus.
3 Malnutrition.
1 Congenital Pyloric Stenosis.
1 Tubercular Peritonitis.
1 Anæmia

Much Improved.

5 Rickets.
1 Malnutrition.

No Improvement.

3 Rickets (removed at parents' request within one week of admission.)
1 Rickets and Malnutrition (removed at parents' request within one week of admission).
1 Anæmia and Malnutrition (removed at parents' request within one week of admission).

Deaths.

The number of deaths during 1932 was seven, as follows :—

1 Rickets and Tubercular Meningitis.
1 Marasmus and acute Broncho-Pneumonia.
1 Marasmus Influenza and acute Pneumonia.
1 Acute Broncho-Pneumonia.
2 Rickets and acute Broncho-Pneumonia.
1 Prematurity and Marasmus (died 30 minutes after admission).

Supervision of Midwives.

There are 76 midwives on the register in Salford: 10 are connected with Public Institutions, leaving 66 midwives practising in Salford, of whom 51 reside within the City.

The midwives are regularly visited, and their books, instruments, etc., inspected by the Assistant Inspector of Midwives under the supervision of the Senior Medical Officer. During the year 1932, 339 visits were paid to midwives, and in addition, 972 miscellaneous visits were paid, making a total of 1,311.

From time to time meetings are held at the Health Office, where midwives may discuss with the Medical Officer any difficulties which may arise in their practices, and where the Medical Officer brings to their notice any points which she wishes them to observe.

During the year 1932, 1,832 births were attended by midwives alone, and 238 cases were attended by doctors with midwives acting as maternity nurses.

Four midwives removed from the district in 1932, one of these being from the District Nurses' Home; two changed their addresses, and ten midwives were newly registered.

Notifications.

Under the Midwives Act, 1902, midwives are required to make the following notifications to the Local Supervising Authority:—

1. Each time they require to call in a Medical Practitioner.
2. Any contact with infectious disease.
3. Stillbirths.
4. Infant deaths.
5. Substitution of artificial feeding for breast feeding.

Medical Assistance.

During the year 828 notifications of a midwife having sent for medical assistance were received, the causes being as follows:—

Abnormal Presentations	75
Deformed Pelvis	2
Ante-partum Hæmorrhage	29
Placenta Praevia	5
Post-partum Hæmorrhage	15
Uterine Inertia	94
Obstructed Labour, or requiring instrumental assistance	142
Retained Placenta or Membranes	36
Ruptured Perineum	171
Rise of Temperature	28
Eclampsia	—
Premature Birth	29
Miscarriage and Abortion	15
Inflammation of Eyes	68
Other causes relating to Mother	75
Other causes relating to Child	44
Total	828

Contact with Infectious Disease.

Four notifications of contact with infectious disease were received from midwives, during 1932.

Investigation of Stillbirths.

Seventy-five Stillbirths were notified by midwives during the year. Each case was thoroughly investigated by the Assistant Inspector of Midwives, and found to be as follows :—

6	Abnormal Presentation.
5	Premature births.
5	Spina Bifida and other deformities.
3	With history of previous stillbirth.
4	Born before arrival of help. (Two Macerated).
13	Macerated fœtus.
3	Maternal Shock.
4	Ante-partum hæmorrhage.
10	Illness of mother.
2	Hydrocephalus.
4	Anencephalus.
10	Difficult Labour.
2	Asphyxia neonatorum. (Cord several times round child's neck).
1	Prolonged Labour.
1	Where mother had suffered as a result of an accident.

Investigation of Infant Deaths.

Thirty Notifications of infant deaths were received, the causes of death being as follows :—

12	Prematurity and debility.
3	Prematurity and cardiac failure.
4	Congenital malformation.
1	Convulsions.
2	Injuries from parturition.
1	Asphyxia pallida.
1	Meloena and hæmorrhage from head.
3	Died before medical assistance could be obtained.

Inquests were held in connection with the three cases where the baby died before medical assistance could be obtained. In all three cases the Coroner returned a verdict of "Death from natural causes." Where necessary the Assistant Inspector of Midwives attends the inquest.

Artificial Feeding of Infants.

Forty-one Notifications of the substitution of artificial feeding for breast feeding of infants were received from midwives during the year 1932.

Public Health (Notification of Puerperal Fever and Puerperal Pyrexia Regulations), 1926 and 1928.

PUERPERAL FEVER.

Twenty-one Cases of Puerperal Fever were notified during the year, of which seven proved fatal ; six midwives had one case each ; one midwife had two cases ; four cases were delivered by nurses from the Royal District Nurses' Home, and nine were confined in Hope Hospital.

All the cases were thoroughly investigated by the Inspector of Midwives, and every precaution taken to prevent the spread of the disease. When the case occurs in the practice of a midwife, the patient is removed to Ladywell Sanatorium, and her room and bedding disinfected. The midwife is interviewed and particulars taken of the case, and also a résumé of the work she has done since she last saw the infected person ; she is temporarily suspended in order that she may go to the Disinfecting Station to have her person, clothing, bag and instruments disinfected. Other cases which the midwife may have been attending at the same time are visited by the Inspector. The midwife is warned to watch these cases carefully, and if she is at all anxious, to send for medical help without delay.

In a case of suspected sepsis, the midwife sends for the doctor and reports at the Health Offices. She is temporarily suspended until she hears the Doctor's decision. As an alternative, she may devote herself to one patient and pass on her other duties to another midwife.

In cases of septicæmia, the Ministry of Health have requested that swabs be taken from the nose and throat of the patient and those who were most closely in contact with her during confinement in order to determine the bacteriological nature of the patient's infection. This has been done in all cases where it has been possible, but in no case was the infection traced to the attendant. In one case, the cultures were sent to the Research Laboratories at Queen Charlotte's Hospital, Hammersmith, as requested by the Minister of Health.

PUERPERAL PYREXIA.

During the year 25 cases were notified in Salford ; 23 recovered and two proved fatal, the cause of death in each case being Septicæmia.

5 Cases occurred in Hope Hospital.
7 Cases were nursed at home.
11 Cases were removed to Hospital.
2 Cases occurred in the Municipal Maternity Home (both cases were removed to Ladywell Sanatorium).

The causes of the Pyrexia were as follows :—

1 Pneumonia.
2 Influenza.
3 Bronchitis.
1 Mastitis.
3 Septic Endometritis following abortion.
2 Septic perineum.
1 Salpingitis.
2 Tuberculosis.
5 Sapræmia.
1 Exhaustion after long labour.
2 Difficult forceps delivery with complete rupture of perineum.
2 Cause unknown.

As the regulations require prompt notification of rise of temperature special attention to these cases is quickly available, and, if necessary, a consultant may be called in. This was done in three cases during 1932.

Bacteriological examinations of lochia and blood are made on request at the Municipal Laboratory.

The same precautions are taken with puerperal pyrexia as with puerperal fever, the disinfection and suspension of midwives being carried out in a similar manner.

Public Health (Ophthalmia Neonatorum) Regulations, 1926 and 1928.

The number of cases of Ophthalmia Neonatorum notified under the above regulations during 1932, was 17, of these :—

11 occurred in the practice of midwives.
2 were notified from the Royal Eye Hospital, Manchester.
3 were notified from Hope Hospital.
1 was a doctor's case.

In 12 cases, both eyes were affected, and in five cases one eye was affected. Five cases were classed as severe, four moderately severe, three slight, and five very slight. All 17 cases recovered without injury to sight.

All notified cases of ophthalmia neonatorum are visited by the Assistant Inspector of Midwives, and, where necessary, the case is referred to the Royal District Nurses' Home, and a nurse sent to carry out treatment under doctor's orders.

During 1932, 68 cases of discharging eyes were notified by midwives. All cases were visited regularly until the condition had cleared.

Infectious Diseases Notification Act, 1889, Pemphigus Neonatorum.

There has been a slight decrease in the number of cases of this disease notified during the year 1932, the number being 21, six less than in the previous year.

17 of these cases were born in Hope Hospital.
4 occurred in the practices of midwives.

Of the 17 cases which occurred among babies born in Hope Hospital, 15 were notified from the Hospital, and two were notified after they had been discharged from the Hospital. The age of onset varied from four days to two weeks. Every precaution was taken to prevent the spread of the disease, the outbreak was of a mild type, and none of the cases proved fatal.

Disinfection of Midwives.

Midwives are required to be disinfected if they have been in contact with any notifiable infectious disease. Two midwives were disinfected at the Mode Wheel Disinfecting Station on account of having been in contact with cases of Pemphigus Neonatorum.

Nursing Homes Registration Act, 1927.

One Nursing Home has been closed during the year, and one has been registered for Maternity. There are now eight Nursing Homes registered in the City ; five of these are Maternity Homes, two Medical and Surgical Homes, and one Maternity and Medical.

These Homes are inspected regularly by the Senior Medical Officer, assisted by the Inspector of Midwives.

Midwives Act, 1918.

Under the Midwives Act, 1918, section 14 (1), the Local Authority is authorised to pay the fees of registered medical practitioners called in by midwives in cases of emergency, and where possible, recover the fee from the patient or her husband. This ensures that no lying-in woman need be without the services of a qualified medical attendant, however poor her circumstances may be. The doctors' accounts are checked, and paid in accordance with the Scale of Fees prescribed by the Ministry of Health.

Investigation of Maternal Deaths.

All maternal deaths occurring in the City are investigated in accordance with instructions received from the Ministry of Health (Circular 116, dated 11-12-30). Homes, doctors and midwives are visited, thorough inquiries made into all the circumstances surrounding the death, and reports thereon sent to the Ministry of Health. During 1932, 25 maternal deaths were investigated and the causes found to be as follows :—

6	Puerperal Septicæmia.
4	Cardiac Disease.
3	Shock following adherent placenta.
1	Ante-partum hæmorrhage and cardiac failure.
1	Acute Nephritis (early puerperium).
1	Post-partum hæmorrhage (Cæsarian Section).
1	Shock.
1	Chronic Nephritis.
1	Acute Yellow Atrophy of Liver.
1	Post-partum Hæmorrhage.
5	Abortion.

SECTION VIII.

Hope Hospital.

The principal alteration in the accommodation provided in this Institution which occurred during 1932 was the opening of two Wards (N.E.1 and N.E.2) in the new Extensions and their occupation by the patients formerly accommodated in the temporary Hospital in Eccles New Road. The number of patients so transferred was 86.

An important alteration in the Staff occurred in September, 1932, when Dr. J. Stuart Smith resigned in order to take up the appointment of Medical Superintendent of the Coventry Municipal General Hospital. Dr. G. Brown was promoted to the post of Deputy Medical Superintendent while retaining his appointment as Resident Surgical Officer.

The transfer of the patients from the Temporary Hospital increased the average number of available beds to 1,086, and largely owing to this fact the average number of beds and cots occupied increased to 961 as compared with 919 in 1931.

The statistics relating to the year's work are appended to this Section, and the following items have been extracted as indicating the increase in the work performed as compared with 1931 :—

	1931.	1932.
Number of patients treated	9,710	10,158
Out-patients attendances	10,423	11,551
Maternity cases	809	843
Surgical operations	2,004	2,186

The important investigations as to the efficacy of Felton's serum in dealing with cases of pneumonia were continued during 1932, and the following remarks upon this work are extracted from the report of the Medical Superintendent of Hope Hospital :—

"Further work on Pneumonia has been accomplished, but it has not been possible to reach any definite conclusions as to the efficacy of Felton's Serum. Owing to the very high cost of production of this serum, adequate supplies have not been available. Investigations, however, are proceeding.

Special work on Pneumonia at Hope Hospital is now entering upon its second year, and the following is a very short report on the work done in the past year.

160 cases have been dealt with, and I am sorry to say that the mortality of the whole group is 25 per cent, for we have had 46 deaths. I believe that this figure is identical with that of other hospitals so that we can boast no improvement as yet.

The incidence throughout the year is as follows:—

First quarter	49	cases.
Second quarter	53	,,
Third quarter	19	,,
Fourth quarter	39	,,
Total	160	,,

Type 1.—Male 54, deaths 12; Female 13, deaths 2; Mortality 21 per cent.

Type 2.—Male 23, deaths 9; Female 4, deaths 3; Mortality 44 per cent.

Type 3.—Only one male case who died.

Group 4.—Male 23, deaths 5; Female 6, deaths nil; Mortality 17 per cent.

Unclassified.—Male 22, deaths 10; Female 14, deaths 4; Mortality 40 per cent.

Serum treatment is only applicable to Type 1 cases, and these form 42 per cent of the cases dealt with. Increasing experience shows that early treatment is just as essential in Pneumonia as in Diphtheria, and it is hoped in the future that patients will reach the Hospital at an earlier stage of the disease than formerly. Work is progressing to enable a more rapid determination of type to be made. From this it is hoped that greater scope for serum administration will occur this coming year, and that better results will be obtained in consequence."

Operations for the removal of tonsils and adenoids performed during 1932 numbered 723, 636 of these being carried out upon children of school age. The Hospital is still unrecognised by the Board of Education for the performance of these operations, with the result that no grant towards their cost is obtainable. The question of gaining recognition was considered during the year by both the Hope Hospital Sub-Committee and the Education Committee, and a decision to again approach the Board of Education was approved.

Towards the end of 1932, a formal agreement was entered into with the Christie Cancer Hospital and Holt Radium Institute for the treatment of patients suffering from cancer who might be in or attending at Hope Hospital. This agreement is for a period of twelve months, commencing on 1st January, 1933. The agreement formally ratified arrangements which had existed for some time prior to its completion, and which had been provided by the authorities of the Hospital and Institute without financial recognition by the Corporation.

The following statistics relate to the work performed at Hope Hospital during 1932 :—

WORK OF THE HOSPITAL DURING 1932.

(The comparative figures for 1928–29–30–31 are given.)

STATISTICS.

1. GENERAL.

	1928.	1929.	1930.	1931.	1932.
Remaining in Hospital under treatment at close of year	914	922	941	935	793
Admissions	6,430	7,477	7,583	7,963	8,521
Births	559	673	685	812	844
Total	7,903	9,072	9,209	9,710	10,158
	s. d.	s. d.	s. d.	s. d.	s. d.
Average cost per patient per week	34 7	36 2	43 4	45 4½	55 4
Discharges during the year	5,545	6,936	7,130	7,754	8,156
Deaths	926	1,141	1,038	1,093	1 052
Total	6,471	8,077	8,168	8,847	9,208
Mortality	11·7%	12·5%	10·9%	10·6%	10·3%

2. SURGICAL OPERATIONS.

(*a*) Number of patients	1,074	1,403	1,807	2,004	2,186
(*b*) Number of Operations	1,191	1,535	1,931	2,119	2,272

Operators.

Medical Superintendent	719	848	795	544	477
Resident Staff	350	550	793	1,231	1,439
Visiting Surgeons	5	4	219	247	270

Anœsthetists.

Dr. Ghosh	613	679	503	508	522
Resident Staff	461	724	1,304	1,491	1,664
Visiting Anæsthetists	—	—	—	5	—

Classification of Operations.

	1930.	1931.	1932.
1. Mouth (including teeth)	19	22	30
2. Abscesses (various)	69	71	103
3. Gynæcological	413	404	437
4. Tonsils and Adenoids	612	628	723
5. Bones and Joints	113	177	192
6. Stomach and Intestines	72	60	58
7. Liver and Gall Bladder	19	14	15
8. Appendix	217	262	234
9. Hernia	133	128	130
10. Genito-Urinary	47	71	88
11. Hæmorrhoids	44	77	58
12. Breast	9	15	10
13. Ear	11	10	8
14. Empyema	9	33	26
15. Nose	6	11	11
16. Eye	—	2	1
17. Brain	—	1	2
18. Thyroid Gland	—	2	2
19. Various	14	46	58
	1,807	2,034	2,186

Among the 2,186 operations there were 413 abdominal sections including 11 Cæsarians.

3. Maternity Department.

	1932.		1931.	
	Total.	Per cent.	Total.	Per cent.
Total Number of Cases	843	—	809	—
Instrument and Manipulative Deliveries	39	—	38	—
Craniotomy	3	—	—	—
Cæsarian Section	9	—	6	—
Induction of Labour—				
Bougie	30	—	28	—
Quinine	9	—	4	—
Hæmorrhages	31	—	22	—
Albuminuria of Pregnancy	14	—	30	—
Eclampsia	2	—	4	—
Puerperal Septicæmia	3	0·36	4	0·49
Maternal Deaths	12	1·4	9	1·1
Pemphigus	15	—	10	—
Ophthalmia Neonatorum	3	—	1	—
Stillbirths	75	8·7	60	7·4
Infantile Deaths (up to 10 days)	28	3·5	19	2·3
Plural Births—				
Twins	13	—	5	—
Triplets	—	—	1	—
Antenatal Attendances	5,578	—	4,943	—
Antenatal New Cases	774	—	755	—
Percentage of Cases who had attended Antenatal clinic	—	91·8	—	93·4

CAUSES OF MATERNAL DEATHS.

Puerperal Septicæmia	3
Heart disease complicating pregnacy	3
Eclampsia	1
Acute yellow atrophy of liver	1
Post partum hæmorrhage	3
Ante partum hæmorrhage	1
Total	12

CAUSES OF DEATH IN STILLBORN INFANTS.

Maceration	15
Placenta Prævia	12
Malpresentation	8
Prolapse of Cord	6
Prematurity	6
Deformities	5
Disproportion	5
Uterine Inertia	2
Delayed second stage	2
Toxæmia of pregnancy	2
Accidental Hæmorrhage	2
Fœtal Ascites	1
No obvious cause	9
Total	75

CAUSES OF NEO-NATAL DEATHS.

Prematurity	18
Icterus gravis	2
Specific Disease	2
Hydrocephalus	2
Acute œdema of lungs	1
Pneumonia	1
Cerebral Injury	1
Congenital Heart Disease	1
	28

4. X-RAY DEPARTMENT.

	1928.	1929.	1930.	1931.	1932.
Number of Patients	1,118	1,300	1,985	2,559	2,908

5. DEPARTMENT OF MASSAGE AND ELECTRO-THERAPEUTICS.

	1928.	1930.	1930.	1931.	1932.
(*a*) *Massage.*					
Number of In-patients	212	247	309	317	379
Number of Out-patients	76	85	125	187	223
Total	288	332	434	504	602
Number of Treatments—					
In-patients	6,333	8,246	9,377	8,911	9,588
Out-patients.................	2,089	2,579	3,114	4,152	5,165
Total	8,422	10,825	12,491	13,063	14,753
(*b*) *Electro-Therapeutics.*					
In-patients	44	34	85	90	103
Out-patients.................	29	26	60	69	92
Total	73	60	145	159	195
Number of Treatments					
In-patients	954	1,513	3,256	2,901	3,099
Out-patients.................	862	854	1,560	2,421	3,000
Total	1,816	2,367	4,816	5,322	6,099
(c) *Ultra-violet Radiation.*					
Number of Treatments	1,400	1,730	2,072	2,105	2,664

6. OUT-PATIENTS' DEPARTMENT.

	1928.	1929.	1930.	1931.	1932.
Dressings and Treatments	2,398	6,414	6,523	9,684	9,064
Consultations, etc.	1,404	3,915	4,522	739	2,487
Total	3,802	10,329	11,045	10,423	11,551

7. PATHOLOGICAL DEPARTMENT.

	1930.	1931.	1932.
Autopsies conducted............	127	143	196
Specimens Examined	2,487	4,330	5,173

8. MENTAL WARDS.

	Male.		Female.		Total.	
	1931.	1932.	1931.	1932.	1931.	1932.
Patients under treatment on 1st January	78	65	120	105	198	170
Patients from Asylum..........	2	—	—	—	—	—
Patients admitted during the year	165	185	169	174	334	359
Total	245	250	289	279	532	529

ADMISSIONS.

	Male.		Female.		Total.	
	1931.	1932.	1931.	1932.	1931.	1932.
From Hospital Wards	34	42	43	30	336	359
From Outside	133	143	126	144		
On 3-day Order	130	143	126	144	256	287
On 14-day M.O.'s Order	35	42	43	30	78	72
On 14-day Justice's Order	—	—	—	—	—	—

DISCHARGES.

	Male.		Female.		Total.	
	1931.	1932.	1931.	1932.	1931.	1932.
Discharged during the Year	145	162	149	130	294	292
Released c/o friends	66	69	54	44	120	113
Transfers to Mental Hospital	36	52	36	37	72	89
Released to other wards	41	41	55	48	96	89
Released to other Institutions	2	—	4	1	6	1
Total	145	162	149	130	294	292
Deaths during the year	35	23	35	32	70	55

TABLE SHOWING INCREASE OF WORK OF THE HOSPITAL SINCE 1914.

Year.	Admissions.	Births.	Discharges.	Deaths.	Average Daily No. of Patients.	Operations.
1914	2,728	12	2,135	591	749	149
1915	1,632	4	1,393	491	514	160
1916	1,330	—	941	353	439	175
1917	1,263	3	1,058	335	407	145
1918	1,402	16	1,104	391	303	144
1919	1,559	7	1,056	348	339	107
1920	2,516	64	1,736	451	689	163
1921	3,335	227	2,899	617	858	332
1922	3,720	263	3,272	745	888	395
1923	4,463	250	3,749	815	870	430
1924	4,416	182	3,742	922	811	523
1925	5,315	293	4,292	1,015	868	802
1926	5,471	366	4,839	903	943	882
1927	5,801	409	5,125	1,003	943	960
1928	6,430	559	5,545	926	960	1,076
1929	7,477	674	6,936	1,141	918	1,403
1930	7,583	685	7,150	1,038	969	1,807
1931	7,963	812	7,762	1,093	919	2,004
1932	8,521	843	8,156	1,052	961	2,186